

100% Australian content

FEATURES

Digital disease
virus fact v. virus fiction
ST and IT
the new tax and you
eyond XML
the future of
markup languages
hip roadmap
processor futures

FIRST TAKE

Graphics card
Leadtek WinFast
eForce 256
Apple upgrade
Mac OS 9
Next generation MP3
Diamond Rio 500
Pentium III notebook
Dell Inspiron 7500

WORKSHOP

Making the most of multimedia
Windows 98
Sharing your Internet connection
Multiprocessing and geometry processors
Plus Mac OS, Linux, Java, C++ and more

ON THIS MONTH'S TRIPLE CD

Desktop enhancements
Themes, screensavers, utilities
the top 99 of '99
Classics, essentials, APC picks
Productivity software
Corel WordPerfect Office 2000 trial version
Keep them busy
Parents' holiday survival kit

Please inquire at place of purchase
if your cover CD pack is missing.

Australian Personal Computer

3CDs

ISSN - 0725-4415 NZ \$9.95 INCL. GST

AUSTRALIA'S LEADING COMPUTER MAGAZINE**December 1999 \$8.95**

PC SCORCHERS

BLAZING SPEED AT PRICES YOU WON'T BELIEVE

apcmag. labs reviews:

24 PCs

- 6 under \$1,500
- 11 under \$3,000
- 7 'Ultimate'

Plus

We test a 700MHz
AMD Athlon system



BEARING GIFTS. JINGLE DELL.

DELL™ INSPIRON™ 7500 – DESKTOP REPLACEMENT NOTEBOOKS

COMMON FEATURES • 3.5" 1.44MB Diskette Drive • High Fidelity Audio SoundBlaster Compatible • 24X/Max Variable CD-ROM Drive

DELL™ INSPIRON™ 7500 R500YT NOTEBOOK INTEL™ PENTIUM™ III PROCESSOR 500MHz

- On Die 256GB L2 Cache
- 128MB 100MHz SDRAM
- 16GB Ultra ATA Hard Drive
- RealPort CardBus Ethernet 10/100 & Modem 56 (2GB)
- 8MB ATI RADE Mobility™ P2K AGP Video Controller
- 15.4" SXGA TFT Display (1280x1024)
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Office 2000 Small Business Edition
- 1 Year Limited Warranty (With International Warranty)
- **Free Lifetime Telephone Technical Support**

\$6,979* plus delivery

\$56 per week**

FREE Second Battery
Offer valid until 16th December 1999

E-VALUE CODE 521131-47031

DELL™ INSPIRON™ 7500 C433LT INTEL™ CELERON™ PROCESSOR 433MHz

- On Die 128KB L2 Cache
- 64MB SDRAM
- 4GB Ultra ATA Hard Drive
- 4MB ATI RADE Mobility™ P2K AGP Video Controller
- 15" XGA Colour TFT Display
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 99
- Internal Modem
- 1 Year Limited Warranty (With International Warranty)
- **Free Lifetime Telephone Technical Support**

\$4,299* plus delivery

\$36 per week**

Upgrade to:
• Add Image CMT™ PC Card Drive with 1 Clik disk \$259
• Add HP 340 Portable Printer \$470

E-VALUE CODE 511122-47031

DELL™ INSPIRON™ 3700 – MAXIMUM MOBILITY NOTEBOOKS

COMMON FEATURES • 3.5" 1.44MB Diskette Drive • High Fidelity Audio SoundBlaster Compatible • 1 Year Limited Warranty • Microsoft® Windows® 98 Second Edition • 24X/Max Variable CD-ROM Drive

DELL™ INSPIRON™ 3700 R500GT NOTEBOOK INTEL™ PENTIUM™ III PROCESSOR 500MHz

- On Die 256GB L2 Cache
- 128MB 100MHz SDRAM
- 16GB Ultra ATA Hard Drive
- RealPort CardBus Ethernet 10/100 & Modem 56 (2GB)
- 8MB ATI RADE Mobility™ P2K AGP Video Controller
- 14.1" XGA Colour TFT
- Microsoft® OEM Works Suite 99
- Deluxe Carrying Case
- **Free Lifetime Telephone Technical Support**

\$5,949* plus delivery

\$50 per week**

FREE Second Battery
Offer valid until 16th December 1999

E-VALUE CODE 521131-47031

DELL™ INSPIRON™ 3700 C433ST INTEL™ CELERON™ PROCESSOR 433MHz

- On Die 128KB L2 Cache
- 32MB SDRAM
- 4GB Ultra ATA Hard Drive
- 30cm" 10/100 LAN CardBus PC Card
- 8MB ATI RADE Mobility™ P2K AGP Video Controller
- 12.1" XGA Colour TFT Display
- Microsoft® OEM Works Suite 99
- Deluxe Carrying Bag
- **Free Lifetime Telephone Technical Support**

\$3,369* plus delivery

\$28 per week**

Upgrade to:
• 8K Max Variable DVD-ROM Drive and MPEG Decoder Card \$497
• Add Image CMT™ PC Card Drive with 1 Clik disk \$259

E-VALUE CODE 511117-47031

DELL™ POWEREDGE™ SERVERS

DELL™ POWEREDGE™ 2300 SERVER INTEL™ PENTIUM™ III PROCESSOR 500MHz (DUAL PROCESSOR CAPABLE)

- Rack-mount Capable MiniTower (Midnight Grey)
- 128MB 100MHz SDRAM With ECC (Upgradable to 2GB)
- 9GB UVD SCSI Hard Drive
- 512KB Internal L2 Cache
- 3.5" 1.44MB Diskette Drive
- Standard Intel® Pro 100-MC
- Dell® Mouse
- Integrated Ultra2/UD and Ultra/Narrow SCSI Controllers
- 40X Max Variable IDE CD-ROM Drive
- 15" Colour Monitor (13.7" v.s.)
- Standard Openview Network Node Manager S.E.
- 3 Year Limited Warranty
(With 1 Year Next Business Day On-Site Service)**
- **Free Lifetime Telephone Technical Support**

E-VALUE CODE 521131-47031

\$4,729* plus delivery

\$38 per month**

Upgrade Options:
• Additional 2nd Intel® Pentium® III processor 500MHz \$1,215
• Additional 9GB UVD SCSI Hard Drive \$745
• Newell Network 5.0 for MS Windows NT® Server 4.0*
• Dell Critical Care 4-Hour On-Site Response from 1st to 5th years** (call for latest prices)

E-VALUE CODE 521125-47031

DELL™ POWEREDGE™ 1300 SERVER INTEL™ PENTIUM™ III PROCESSOR 450MHz (DUAL PROCESSOR CAPABLE)

- MiniTower (Midnight Grey)
- 64MB 100MHz SDRAM With ECC (Upgradable to 1GB)
- 6GB UVD SCSI Hard Drive
- 512KB Internal L2 Cache
- 3.5" 1.44MB Diskette Drive
- Standard Intel® Pro 100-MC
- Dell® Mouse
- Integrated Ultra2/UD SCSI Controller
- 40X Max Variable IDE CD-ROM Drive
- Standard Openview Network Node Manager S.E.
- 3 Year Limited Warranty
(With 1 Year Next Business Day On-Site Service)**
- **Free Lifetime Telephone Technical Support**

E-VALUE CODE 521115-47031

\$2,929* plus delivery

\$26 per month**

Upgrade Options:
• Additional 2nd Intel® Pentium® III processor 450MHz \$852
• Additional 6GB UVD SCSI Hard Drive \$745
• 15" Colour Monitor (13.7" v.s.) \$344
• Newell Network 5.0 for MS Windows NT® Server 4.0* (call for latest prices)

E-VALUE CODE 521115-47031

DELL™ PRECISION™ WORKSTATION

DELL™ PRECISION™ WORKSTATION 410 INTEL™ PENTIUM™ III PROCESSOR 600MHz (DUAL PROCESSOR CAPABLE)

- MiniTower Model
- 512KB Integrated L2 Cache
- 256MB 100MHz SDRAM With ECC
- 9 GB Ultra ATA Hard Drive (7200rpm)
- 3.5" 1.44MB Diskette Drive
- Integrated Scan Fast Ethernet XL with WADL
- Integrated Ultra2/Wide and Ultra Wide SCSI Controllers
- Integrated 32M ATA-33 IDE Controller
- 32MB Diamond Fire GL AGP Graphics Card
- Integrated SoundBlaster Pro Compatible Sound
- 40X Max Variable IDE CD-ROM Drive
- 21" Sony Flat Panel Display Monitor
- Microsoft® IntelliMouse™
- Microsoft® Windows™ 4.0
- 3 Year Limited Warranty
(With 3 Year Next Business Day On-Site Service)**
- **Free Lifetime Telephone Technical Support**

E-VALUE CODE 621130-47031

\$7,209

\$61 per week**

E-VALUE CODE 621130-47031

DELLWARE

HP OFFICEJET 635

- HP "All-in-One" It can Print, Fax, Scan & Copy
- Plain paper fax with 100 speed dials & 65 page memory
- Printing at 600 dpi at 5ppm black and 20ppm colour speed



\$659* plus delivery

HP SCANJET 3300C

- Easy set up and fast operation with universal Serial Bus (USB)
- 36bit colour, 600 dpi optical and 9600dpi enhanced resolution
- Comes standard with HP PrecisionScan LT scanning software
- HP Copy Utility & Adobe PhotoDeluxe Home Edition standards



\$249* plus delivery



To order call today Mon to Fri 8am-8pm,
Sat 9am-3pm (EST)
In New Zealand call 0800 937 739*
for pricing and other information.

1300 303 107



BUILD YOUR OWN AND ORDER ON-LINE

USE THE POWER OF THE E-VALUE™ CODE.

MATCH OUR LATEST TECHNOLOGY
WITH OUR LATEST PRICES. ENTER
THE E-VALUE CODE ONLINE AT
WWW.DELL.COM.AU OR ONE IT TO
YOUR SALES REP OVER THE PHONE.

BE DIRECT™

DELL™

www.dell.com.au

DELL'S NORMAL TERMS AND CONDITIONS APPLY AND ARE AVAILABLE ON REQUEST. PLEASE CALL OR REQUEST ON-LINE.

"Prices and specifications valid only in Australia and subject to change without notice. All prices shown include tax but delivery is additional. Certain configurations cannot be charged. Dell, the Dell logo, Dell Dimension, Inspiron and PowerEdge, are registered trademarks and Dell Precision is a trademark and E-Value is a service mark of Dell Computer Corporation. The Intel Inside logo and Pentium are registered trademarks and Celeron is a trademark of Intel Corporation. Microsoft, Windows 98 and Windows NT are registered trademarks of Microsoft Corporation. Other trademarks and trade names may be used in this document refer to either the entities' claiming marks and names or their products. Dell disclaims proprietary interest in the marks and the names of others. *For hard drives GB means 1 billion bytes total accessible capacity varies depending upon operating environment. *14X Min, *17X Min, *25X Min, *10X Min, *17X Min, *20X Min. All efforts will be made to check for errors in typographical/However, inadvertent errors may occur for which Dell may not be responsible. Lifetime telephone technical support refers to lifetime of the system. ** Dell can arrange for rentals based on a 36 month term excluding stand duty and HD which varies from state to state. Rentals and operating leases are available only to approved companies and business customers. Figures shown are indicative and may vary with interest rates. ***On-site service provided by independent third party service provider and may not be available in remote locations. Technicians shall be dispatched following telephone technical support. Copyright 1999 Dell Computer Corporation. All Rights reserved. No.2 in total systems shipped. Source IDC 2nd Quarter 1999.

DELL0194/APC/GSP/PAE

THIS CHRISTMAS WE COME

Dell has pioneered the direct way of manufacturing and selling PCs, and it's seen us become the number 2 PC company in the world*. We're sure you can appreciate that to achieve this level of success, you need more than just exceptional prices. Here are 5 more good reasons:

1. WE BUILD TO YOUR SPECIFICATIONS.

Dell doesn't keep a stockpile of systems – we build to order. By providing this custom configuration, your exact requirements are integrated during the manufacturing process, saving you time and helping to reduce your total cost of ownership. Plus it means your Dell system arrives fully tested and ready to run.

2. DEAL DIRECT AND SAVE.

By dealing direct, we cut out retailer and middleman mark-ups. As a result, not only are these savings passed on to you in our great prices – it also means you can own our latest technology for less.

3. ORDERING ONLINE IS EASY.

Dell offers online customer access 24 hours a day, 7 days a week. Our website contains over 35,000 pages of technical information, including secure shopping, real-time pricing updates, product information

(with multimedia demonstrations), service and support options, order status reporting, trouble-shooting and a software library.

4. WE KEEP UP WITH THE LATEST TECHNOLOGY.

When we get your order, we're able to build your computer using the very latest technology we get our hands on. As a result, high quality products offering exceptional reliability and value for money are standard.

5. COMPLETE PEACE OF MIND.

All Dell products come with free telephone technical support for the lifetime of the system. So if a problem occurs (which would be rare), you can simply call Dell and talk to a member of our Tech Support team (Mon-Fri 8am-8pm, Sat 8am-5pm). They will either diagnose and fix your problem over the phone, or organise a service call.

DELL DIMENSION® DESKTOPS – SMALL BUSINESS SYSTEMS

COMMON FEATURES • Mini Tower Model • 3.5" 1.44MB Diskette Drive • McAfee Virus Scan • 3 Year Limited Warranty • Microsoft® IntelliMouse™ • Dell Keyboard/Keyboard

DELL DIMENSION® XPS T700R DESKTOP INTEL® PENTIUM® III PROCESSOR 700MHz

- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 13.6GB Ultra ATA Hard Drive
- 32MB Ethernet® 10/100 PCI NIC for Complete PC Management
- 32MB NVIDIA TNT2 M64 2X AGP Graphics Card
- Integrated Yamaha 64Voice Waveable Sound
- 48K Max Variable CD-ROM Drive
- 17" Colour Monitor (15.5" v.i.s.)
- Microsoft® Windows NT 4.0
- Microsoft® OEM Works Suite 98
- Free Lifetime Telephone Technical Support

\$3,679*

plus delivery

\$31 per week**

- Upgrade to:
- 204GB Ultra ATA Hard Drive (7.200rpm) \$150
 - 8K Max Variable DVD-ROM Drive and Software Decoding \$84
 - 15" Flat Panel Monitor (15.0" v.i.s.) \$149
 - Add Sony CD-RW with Formatted Media \$374

E-VALUE CODE Z21119-470311

DELL DIMENSION® XPS T550 DESKTOP INTEL® PENTIUM® III PROCESSOR 550MHz

- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 8.4GB Ultra ATA Hard Drive
- 32MB Ethernet® 10/100 PCI NIC for Complete PC Management
- 32MB NVIDIA TNT2 M64 2X AGP Graphics Card
- 48K Max Variable CD-ROM Drive
- 15" Colour Monitor (13.7" v.i.s.)
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 98
- Free Lifetime Telephone Technical Support

\$2,399*

plus delivery

\$20 per week**

- Upgrade to:
- 13.6GB Ultra ATA Hard Drive (7.200rpm) \$31
 - 17" Colour Monitor (15.5" v.i.s.) \$187
 - ImageZap 250MB Internal Drive \$280
 - Add Sony CD-RW with Formatted Media \$374

E-VALUE CODE Z21113-470311

DELL DIMENSION® L500C DESKTOP INTEL® CELERON® PROCESSOR 500MHz

- 128KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 6.4GB Ultra ATA Hard Drive
- Integrated Intel 10/100 PCI Ethernet Controller
- Integrated Direct AGP 4MB Dynamic Video Memory
- Integrated Creative Labs 64 Voice Sound
- 40K Max Variable CD-ROM Drive
- 17" Colour Monitor (15.5" v.i.s.)
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Office 2000 Small Business Edition
- Free Lifetime Telephone Technical Support

\$2,229*

plus delivery

\$19 per week**

- Upgrade to:
- 13.6GB Ultra ATA Hard Drive \$31
 - 17" Colour Monitor (15.5" v.i.s.) \$430
 - Harmon Kardon HK195 Speakers \$52
 - Add ImageZap 250MB Internal Drive \$280

E-VALUE CODE Z21112-470311

DELL DIMENSION® XPS T500 DESKTOP INTEL® PENTIUM® III PROCESSOR 500MHz

- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 6.4GB Ultra ATA Hard Drive
- 32MB Ethernet® 10/100 PCI NIC for Complete PC Management
- 32MB NVIDIA TNT2 M64 2X AGP Graphics Card
- 48K Max Variable CD-ROM Drive
- 15" Colour Monitor (13.7" v.i.s.)
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 98
- Free Lifetime Telephone Technical Support

\$2,099*

plus delivery

\$18 per week**

- Upgrade to:
- 13.6GB Ultra ATA Hard Drive \$31
 - 17" Colour Monitor (15.5" v.i.s.) \$187
 - ImageZap 250MB Internal Drive \$280
 - Microsoft® OEM Office 2000 Small Business Edition \$181

E-VALUE CODE Z21111-470311

DELL DIMENSION® DESKTOPS – MULTIMEDIA SYSTEMS

COMMON FEATURES • 3.5" 1.44MB Diskette Drive • Microsoft® Windows® 98 Second Edition • McAfee Virus Scan • 3 Year Limited Warranty • Microsoft® IntelliMouse™ • Dell Keyboard/Keyboard

DELL DIMENSION® XPS T700R DESKTOP INTEL® PENTIUM® III PROCESSOR 700MHz

- Mini Tower Model
- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 13.6GB Ultra ATA Hard Drive
- 16MB 3Dfx Voodoo 3000 AGP Graphics Card
- Turtle Beach Montage II 32Voice PCI Sound Card
- 48K Max Variable CD-ROM Drive
- Active Lancing ACS-340 Speakers with Subwoofer
- 17" Colour Monitor (15.5" v.i.s.)
- 30cm" US Robotics® 56K PCI Voice Fax/modem for Windows
- Microsoft® OEM Works Suite 98
- Free Lifetime Telephone Technical Support

\$3,799*

plus delivery

\$32 per week**

- Upgrade to:
- 20.4GB Ultra ATA Hard Drive (7.200rpm) \$150
 - 8K Max Variable DVD-ROM Drive and Decoder Card with TV Out \$215
 - Active Lancing ADA-880 Dolby® Digital Speakers with Subwoofer \$234
 - 15" Flat Panel Monitor (13.7" v.i.s.) \$393

E-VALUE CODE Z11120-470311

DELL DIMENSION® XPS T600R DESKTOP INTEL® PENTIUM® III PROCESSOR 600MHz

- Mini Tower Model
- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 13.6GB Ultra ATA Hard Drive
- 32MB NVIDIA TNT2 M64 2X AGP Graphics Card
- Turtle Beach Montage II 32Voice PCI Sound Card
- 48K Max Variable CD-ROM Drive
- Active Lancing ACS-340 Speakers with Subwoofer
- 17" Colour Monitor (15.5" v.i.s.)
- 30cm" US Robotics® 56K PCI Voice Fax/modem for Windows
- Microsoft® OEM Works Suite 98
- Free Lifetime Telephone Technical Support

\$3,229*

plus delivery

\$27 per week**

- Upgrade to:
- 20.4GB Ultra ATA Hard Drive (7.200rpm) \$150
 - 8K Max Variable DVD-ROM Drive and Decoder Card with TV Out \$215
 - Active Lancing ADA-880 Dolby® Digital Speakers with Subwoofer \$234
 - 15" Flat Panel Monitor (15.0" v.i.s.) \$149

E-VALUE CODE Z11117-470311

DELL DIMENSION® XPS T500 DESKTOP INTEL® PENTIUM® III PROCESSOR 500MHz

- Mini Tower Model
- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 6.4GB Ultra ATA Hard Drive
- 16MB 3Dfx Voodoo 3000 AGP Graphics Card
- Turtle Beach Montage II 32 Voice PCI Sound Card
- 48K Max Variable CD-ROM Drive
- Harmon Kardon HK195 Speakers
- 17" Colour Monitor (15.5" v.i.s.)
- 30cm" US Robotics® 56K PCI Voice Fax/modem for Windows
- Microsoft® OEM Works Suite 98
- Free Lifetime Telephone Technical Support

\$2,299*

plus delivery

\$19 per week**

- Upgrade to:
- 13.6GB Ultra ATA Hard Drive (7.200rpm) \$31
 - 15" Colour Monitor (13.7" v.i.s.) \$430
 - 8K Max Variable DVD-ROM Drive and Software Decoding \$84
 - ImageZap 250MB Internal Drive \$280

E-VALUE CODE Z11112A-470311

DELL DIMENSION® L433C DESKTOP INTEL® CELERON® PROCESSOR 433MHz

- Mini Tower Model
- 128KB Integrated L2 Cache
- 32MB 100MHz SDRAM
- 4.3GB Ultra ATA Hard Drive
- Integrated Direct AGP 4MB Dynamic Video Memory
- Creative Labs SoundBlaster 64 Voice PCI Sound Card
- 40K Max Variable CD-ROM Drive
- Harmon Kardon HK195 Speakers
- 30cm" US Robotics® 56K PCI Voice Fax/modem for Windows
- Microsoft® OEM Works Suite 98
- Free Lifetime Telephone Technical Support

\$1,579*

plus delivery

\$13 per week**

- Upgrade to:
- 6.4GB Ultra ATA Hard Drive \$37
 - 17" Colour Monitor (15.5" v.i.s.) \$187
 - 8K Max Variable DVD-ROM Drive and Software Decoding \$84
 - Active Lancing ACS-340 Speakers with Subwoofer \$88

E-VALUE CODE Z11108-470311

WISE (BUSINESS) MEN BUY FROM DELL

Featured Product is the Dell Dimension™ L Series photographed with optional features, 17" flat panel monitor and Altac Lansing ADA880 Digital Surround Sound Speakers with Subwoofer (Subwoofer not pictured).

You make difficult business decisions every day. So, here's an easy one. Dell can help guide your business into the New Year. In fact, you can probably afford to upgrade the entire office before Christmas. The Dell Dimension™ L Series of desktop systems start from as low as \$1,549*. And they're packed with smart technology too - many of our PCs offer the latest Intel® Pentium® III processors up to 700MHz. The Dell Dimension® L series all feature a minimum 4.3GB* hard drive, plus the entire Dell Dimension® range offer 3 year limited warranty* and lifetime telephone technical support. You can be sure that you are making the right decision with Dell, winner of Australian Personal Computer's Reader's Choice Award for PC service and reliability. That's just one of the reasons Dell is now the number 2 PC company in the world*. Like to know more? Make the wise business decision this Christmas and call Dell on 1300 303 107, or visit www.dell.com.au

CHRISTMAS DEALS FROM DELL

DELL DIMENSION™ XPS T600 DESKTOP INTEL® PENTIUM® III PROCESSOR 600MHz

- Mini Tower Model
- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 13.0GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 32MB NVIDIA TNT2 M64 ZX AGP Graphics Card
- Turtle Beach Montage II 320Watts PC Sound Card
- 48V Max Variable CD-ROM Drive
- Altac Lansing ACS-340 Speakers with Subwoofer
- 17" Colour Monitor (17.3" x 12.1")
- Sony CD RW
- Microsoft® Small Business
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 98
- McAfee Virus Scan
- 3200pi US Robotics 56K PCI Voice Fax modem for Windows
- Dell QuickKey Keyboard
- HP DeskJet 6100 Colour Printer
- HP ScanJet 3300C Scanner
- 3 Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$3,999*

\$33 per week**

Upgrade to:
• 20.4GB Ultra ATA Hard Drive \$150
• Altac Lansing ADA 880 Speakers w/subwoofer \$234

E-VALUE CODE Z11117X-47031

DELL DIMENSION™ L466C DESKTOP INTEL® CELERON® PROCESSOR 466MHz

- Micro Tower Model
- 128KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 6.4GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- Integrated Direct AGP AMD Dynamic Video Memory
- Creative Labs SoundBlaster EX16V PCI Sound Card
- 40X Max Variable CD-ROM Drive
- Harmon Karston HK195 Speakers
- 17" Colour Monitor (15.5" x 11.5")
- Logitech 4-button Mouse/Mouse Wheel (PS/2)
- Lexmark 1100 Colour Jetprinter
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 98
- McAfee Virus Scan
- 2000pi US Robotics 56K PCI Voice Fax modem for Windows
- Dell QuickKey Keyboard
- 3 Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$1,999*

\$17 per week**

Upgrade to:
• 13.0GB Ultra ATA Hard Drive \$93
• Microsoft® OEM Office 2000 Small Business Edition \$181

E-VALUE CODE Z11109X-47031

DELL DIMENSION™ L433C DESKTOP INTEL® CELERON® PROCESSOR 433MHz

- Micro Tower Model
- 128KB Integrated L2 Cache
- 32MB 100MHz SDRAM
- 4.3GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- Integrated Intel 10/100 PCI Ethernet Controller
- Integrated Direct AGP AMD Dynamic Video Memory
- Integrated Creative Labs 64 Voice Sound
- 40X Max Variable CD-ROM Drive
- 15" Colour Monitor (13.7" x 11.5")
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 98
- McAfee Virus Scan
- Dell QuickKey Keyboard
- 3 Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$1,549*

\$13 per week**

Upgrade to:
• 17" Colour Monitor (15.5" x 11.5") \$187
• Microsoft® OEM Office 2000 Small Business Edition \$181
• Add Image Zip 100MB Internal Drive \$140

E-VALUE CODE Z11108X-47031

DELL™ TOPS AUSTRALIAN PERSONAL COMPUTER'S READERS CHOICE
FOR SERVICE AND RELIABILITY - JULY 99



HP DESKJET 610C

- Print everything from creative projects to home finances
- Crisp black text using pigment ink and vibrant colour printing
- Up to 5 ppm black and 2.5 ppm colour printing speed

\$239



HP SCANJET 3300C

- Easy set up and fast operation with USB
- 3600 colour, 600 dpi optical and 9600 dpi enhanced resolution
- FREE HP PrecisionScan LT scanning software
- Fully automated Optical Character Recognition (OCR) capability
- FREE HP Copy Utility & Adobe PhotoDisk Home Edition

\$245

BE DIRECT™



www.dell.com.au

DELL/ATA/PC/PENT/III

BRIGHT AND LIGHT



Featured products are the Dell® Inspiron® 3700

Whatever direction your business is heading this Christmas, you can't miss the bright NEW Dell® Inspiron® 3700 notebook. It gives you lightweight mobility with heavyweight performance. You can even customise in blue and charcoal. There are no compromises either – the Inspiron® 3700 boasts high-end mobile processors ranging from Intel® Celeron® processor 400MHz to Intel® Pentium® III processor 500MHz, hard drives up to 18GB* and maximum TFT screen size of 14.1". It's a wonder it's so light! Dell's hotswap technology allows you to change the CD ROM & floppy drives without even shutting down. And if you're travelling overseas, you can upgrade to an international warranty, making it ideal for doing business on the move. So now it doesn't matter where you spend Christmas. Call Dell on 1300 303 107, or visit www.dell.com.au

CHRISTMAS DEALS FROM DELL

DELL INSPIRON® 7500 R450VT INTEL® PENTIUM® III PROCESSOR 500MHz

- On-Die 256KB L2 Cache
- 128MB 100MHz SDRAM
- 10GB* Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 3Com® 10/100 LAN CardBus PC Card
- 8MB ATI RADE Mobility™-P ZX AGP Video Controller
- High-fidelity Audio SoundBlaster Compatible
- 24X Max* Variable CD-ROM Drive
- 15" XGA Colour TFT Display
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 99
- 1 Year Limited Warranty (With International Warranty)
- **Free Lifetime Telephone Technical Support**

\$5,079* plus delivery
\$46 per week**

FREE Second Battery
Offer valid until 16th December 1999

E-VALUE CODE S21126A-470311

DELL INSPIRON® 7500 C466LT INTEL® CELERON® PROCESSOR 400MHz

- On-Die 128KB L2 Cache
- 64MB SDRAM
- 6.4GB* Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 3Com® 10/100 LAN CardBus PC Card
- 4MB ATI RADE Mobility™-P ZX AGP Video Controller
- High-fidelity Audio SoundBlaster Compatible
- 24X Max* Variable CD-ROM Drive
- 15.5" XGA Colour TFT Display
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 99
- 1 Year Limited Warranty (With International Warranty)
- **Free Lifetime Telephone Technical Support**

\$4,429* plus delivery
\$36 per week**

Upgrade to:

- 10GB* Ultra ATA Hard Drive \$230
- Add RealPort CardBus Ethernet 10/100 & Modem 56 (329d) \$295
- Add Iomega Click™ PC Card Drive with one Click! Disk \$359

E-VALUE CODE S21123A-470311

NEW DELL INSPIRON® 3700 C400ST INTEL® CELERON® PROCESSOR 400MHz

- On-Die 128KB L2 Cache
- 32MB SDRAM
- 4.0GB* Ultra ATA Hard Drive
- 8MB ATI RADE Mobility™-P ZX AGP Video Controller
- High-fidelity Audio SoundBlaster Compatible
- 24X Max* Variable CD-ROM Drive
- 12.1" XGA Colour TFT
- Microsoft® Windows® 98 Second Edition
- Microsoft® OEM Works Suite 99
- 1 Year Limited Warranty
- **Free Lifetime Telephone Technical Support**

\$3,149* plus delivery
\$26 per week**

Upgrade to:

- 6.4GB Ultra ATA Hard Drive \$53
- Add RealPort CardBus Ethernet 10/100 & Modem 56 (329d) \$505
- Add Targus DEFCIN™ 1 Notebook Security System \$68
- Add Iomega Click™ PC Card Drive with one Click! Disk \$359

E-VALUE CODE S21116-470311

For latest prices call Dell today
Mon to Fri 8am-6pm, Sat 9am-3pm (EST)
In New Zealand call 0800 937 739*
for pricing and other information.

1300 303 107



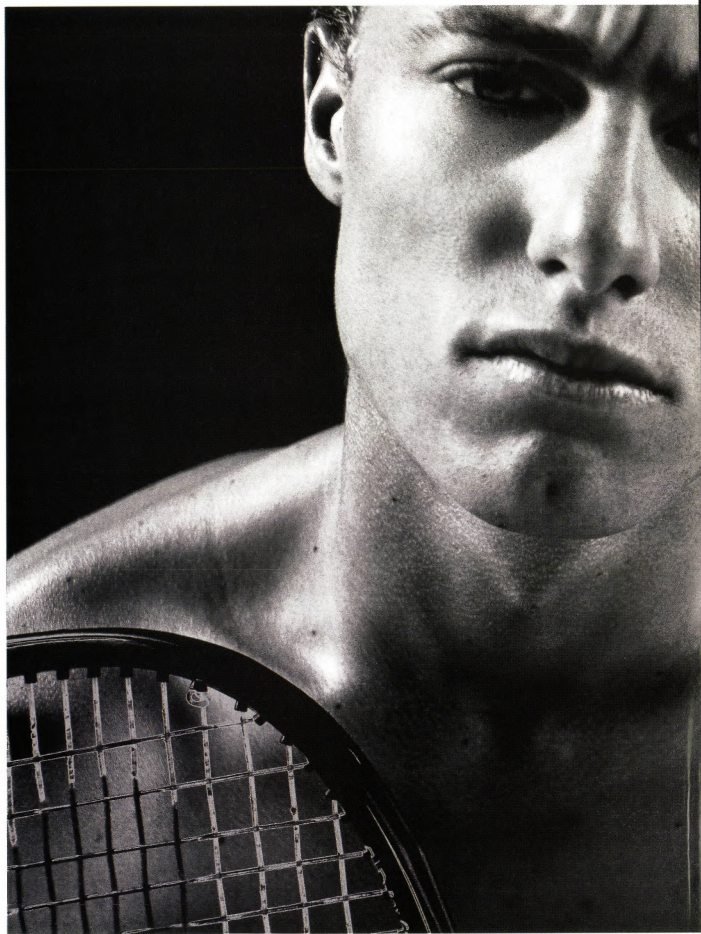
USE THE POWER OF
THE E-VALUE® CODE.

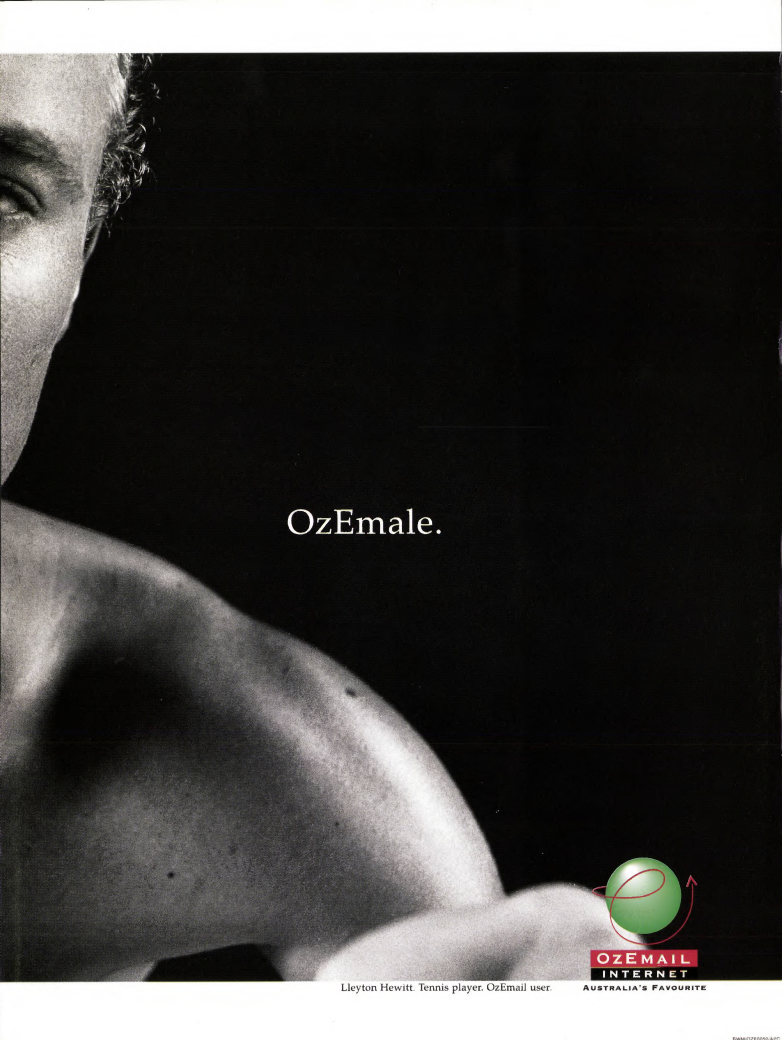
MATCH OUR LATEST TECHNOLOGY WITH OUR
LATEST PRICES. ENTER THE E-VALUE CODE
ONLINE AT WWW.DELL.COM.AU OR GIVE IT
TO YOUR SALES REP OVER THE PHONE.

BUILD YOUR OWN AND ORDER ON-LINE

BE DIRECT™
DELL
www.dell.com.au
CELEBRATING 10 YEARS







OzEmail.



Lleyton Hewitt. Tennis player. OzEmail user.

AUSTRALIA'S FAVOURITE

EDITOR'S NOTE



End of the century PC snapshot

Here's a term that could excite your average marketing type: 'The fastest PCs of the century'. And here's what your average editorial type might do with the same subject matter: 'Good PCs'. Without going into detail about the way different people look at the same thing (too scary), whichever way you look at it, the PCs we review in this issue of *APC* literally are the fastest PCs of the century. Because next month we start a new one.

Each time we review a batch of PCs, we discuss how much the specifications have generally improved since the last lot we tested. We consider the results gleaned from the extensive testing in *APC* Labs and compare the value equation of each machine to give you a sense of what's really available on the market.

A couple of other things are standard too. First, the colour of the PCs we're sent for review has almost always been a dazzling, thrilling beige; this month that situation has changed ever so slightly for the better. Second, the chip inside has usually been from Intel, although there has been the occasional AMD or Cyrix-based system in our reviews. Cyrix is out of the picture now, but several AMD-based machines feature in this month's reviews, and they hold their own in performance terms.

Overall the machines reviewed in this issue offer you a good snapshot of the PC market at the end of the 20th century — they are blazingly fast compared to what's come before them, and overwhelmingly Intel-based, but some healthy competition is lurking.

I guess if we reviewed a stack of PCs in next month's edition we could still use the term 'Fastest PCs of the century' (being the only PCs of the century), but we'd run into trouble soon after using the same terminology.

Note: Those who wish to correspond to debate whether the 20th century ends at the end of this month or at the end of 2000, please don't. Symbolically, the 20th century ends with this month, and most of the planet's parties on New Year's Eve will support that notion. I'll certainly be supporting it, and I hope you have a good one too. See you next year.

Steven Fear

CONTENTS

FIRST TAKE

PROCESSOR	
AMD Athlon 700MHz	31
PENTIUM III NOTEBOOK	
Dell Inspiron 7500 Pentium III	34
OPERATING SYSTEM	
Apple Mac OS 9	36
PROJECTOR	
Compaq MP1600	37
MP3 PLAYER	
Diamond Rio 500	37
LCD	
Apple Cinema Display	38
SCANNER	
CanoScan FB630U	38
DESKTOP GRAPHICS	
Leadtek WinFast GeForce 256	40
I/O HUB	
Xircor PortStation	44
INKJET PRINTER	
Epson Stylus Color 860	44
SOUND KIT	
Creative Sound Blaster Live Platinum	48
ONLINE SHOPPING	
R U Sure	48

NEWSWIRE

Compaq pauses shop plans	17
Net censorship concerns increase	17
Linux shake-up looms	20
Y2K: The flights get cancelled	20
News roundup	20
Net companies top IPO ranks	22
Cashbook	22
No end in sight for IT jobs crisis	24
Commission moves on digital TV	24

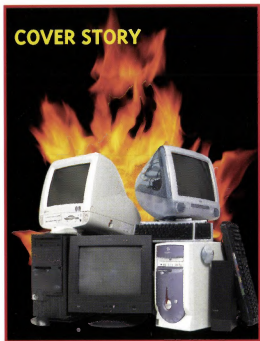
NEWS ANALYSIS

Host of challenges for ASP crowd	26
Wedding of a Net lifetime	28



PC REVIEWS

COVER STORY



PC SCORCHERS

Looking for a new PC? Well, now is the time to buy. With Christmas coming up, vendors are eager for your money and are bound to be offering bargains and discounts of one kind or another. Whether you need a PC for your company, your home office or just for gaming, APC's reviews cover the lot to help you make the best possible choice.

PCs under \$1,500	92	PCs under \$3,000	102	Ultimate PCs	114
Editor's Choice	96	Editor's Choice	107	Editor's Choice	118
Specifications	98	Specifications	110	Specifications	120
Test results	100	Test results	112	Test results	124

apcmag.labs

PCs under \$1,500

- Adelong Everex Explora 450MHz
- Alpha Computers Celeron 500
- Beyond Computers SuperO C Class
- Gateway Neo
- Pioneer Value C500
- THX Discovery

PCs under \$3,000

- Adelong Athlon PC 550MHz
- Alpha Computer PIII-550
- Apple iMac DV Special Edition
- Beyond Computers SuperO P Class
- BlueFire ChromeStation 500T
- ComfortView Professional
- Dell Dimension XPS T550
- Gateway Performance 500
- IBM Aptiva GOA
- Pioneer 2000 SOHO Pentium III
- THX Apollo

Ultimate systems

- Alpha Computer Athlon 650
- Beyond Computers SuperO S
- Class Server
- Dell Dimension XPS T600
- Gateway Performance 600XL
- Packard Bell Platinum 600
- THX Probe



88

WORKSHOP

CONTENTS	147
Bug of the Month	147

TECH TALK

Technobabble	
Multiprocessing and geometry processing	150

Step by Step

Sharing your Internet connection	154
----------------------------------	-----

OPERATING SYSTEMS

Windows 98	
The latest advances in Microsoft's multimedia technology	157

OS/2 Warp

Tailoring the Workplace Shell to your tastes	159
--	-----



Mac OS

Take advantage of some newer disk formats	160
---	-----

Linux

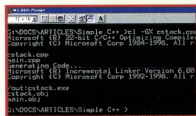
Learn how to clone the Linux setup	163
------------------------------------	-----

PROGRAMMING

Simple C++	
Using classes in object-oriented programming	165

Java

Using checkboxes and radio buttons	167
------------------------------------	-----



FEATURES

GST AND IT

Taxing times

Australia's new tax system — which will incorporate the high-profile GST — promises cheaper PCs, tax-free purchasing for most companies and simpler accounting practices. It also means another compliance headache for IT departments. So, what do you need to know?



VIRUSES

DIGITAL DISEASE

Computer viruses are one of the most hyped threats of the technological era and have spawned a boom industry: antivirus software. New viruses appear all the time, and each is more complex than the last. But are they the threat that some would lead you to believe?

STORAGE AREA NETWORKS

LIKE SANS THROUGH THE HOUR GLASS

Storage Area Networks (SANs) promise continuous access to data, centralised management and the flexible provision of storage for enterprise-scale information systems. But despite emerging open standards, vendor/SAN lock-ins appear inevitable for some time to come.



CHIP FUTURES

PROCESSORS: the next wave

This year's Microprocessor Forum in San Jose saw a spate of new processor announcements. Itanium (formerly Merced) details were revealed, and the future of microprocessor architecture was unveiled.

127

WEB CODE

beyond xml
the future
of markup
languages

133

XML — the heir apparent to the Internet's lingua franca, HTML — has the potential to drive Internet-based communication to new levels, and will prove extremely important in future applications.

FORUM

READERS' SAY 49

TWO BITS WORTH 52

PRICE WATCH
Getting connected 58SERVICE & RELIABILITY
Both sides of the story 60LEGAL EASE
Catching our legal breath 62REPROGRAMMING
How green is your PC? 64

AFTER HOURS

BIBLIOFILE

Learn how to survive Y2K, advertise online, use Lotus Notes and keep track of your finances 201
Perspective: Seasons in the sun 204

INTERACTIVE

Take a round-the-world trip, brush up on your Spanish, hammer your keyboard or chill with the bunnies 205
Interactive News 206

GAMEZONE

Test your role-playing skills with a popular game sequel and some impressive clones of strategy classics 208
Games News 210

WEB FILE

If you're having trouble finding your mate, try looking online 214
Surfbaud: Silicon dating 215

CHIP CHAT

Chip Chat dices up the Gateway stress cow 216

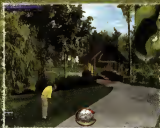




Real courses. Real physics. Real ball control.



Featuring St. Andrews Old Course,
plus 5 new courses



Includes Puzzy Zeeffor,
plus 3 new golfers



You'll feel like Microsoft® Links™ LS 2000 is the perfect reflection of your real golf game. And with five new courses, 35 modes-of-play, and "constructive criticism" from cutup golf announcer, David Feherty, you've got plenty of opportunity to improve. So start practicing at www.microsoft.com/games/links2000.



Microsoft

© 1999 Microsoft Corporation. All rights reserved. Microsoft and Links are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Other products and/or company names appearing herein may be trademarks of their respective owners.

Microsoft

Your guide to the cover CDs



apcmag.cd complements both the magazine and **apcmag.com**. Each month's disc collection features software related to articles in that issue, as well as special CD-

only features and the latest Web browsers, OS patches and popular tools.

Each piece of software includes instructions on whether you will need to unzip the file before installing it, and most also include README files. A complete list of software included on this month's discs is included below.

All you need to use **apcmag.cd** has been created in HTML. You do not need any special software to access the discs, other than a standard browser. The CDs have been tested using Netscape Navigator 3.0 and 4.0, and Microsoft Internet Explorer 3.0 and 4.0.

All software on the CDs is provided as is, without any warranty, express or implied. Complete terms and conditions are included on the CD itself; click on the Conditions of Use link for details.

How to run the CDs

Before using the CDs, please read the Conditions of Use online at apcmag.com/apcmag.cd. These CDs use an Autorun feature for Windows 95, 98 and NT systems. Just insert apcmag.cd and your browser will automatically load with the apcmag.cd front page. Users of other platforms can simply launch their favourite browser and load the file DEFAULT.HTM in the root directory of the CD. For further information, see the instructions on the back cover of the CD cover.

You should carefully read the licensing agreements and honour any evaluation or shareware terms specified, read all instructions and README files, and virus-check every program before use.

While we've taken every care to ensure that the software provided is useful and that it works, we cannot accept responsibility or liability for any of the products included.



What's on the CDs

DISC 1

NEW & HOT

Windows: Animation Shop 2.0, Axis Professional Screen Saver Producer, Brain Energizer 1.1, Capture Express 1.0 Beta, CompuShow Producer 1.0, Cursor Maker 3.0, DiskState 2.01, DUN Optimizer 1.00, Dynamic Submission 2000 5.057, Envision Publisher for Windows 3.01, FTP Voyager 6.2.0.0, Help & Manual 2.21, NextSTART 2.0.90, PowerZip 5.01, Sheriff SDK 2.1, ShockBox 1.3, Superscape/Intel Winamp DSP/VIS Plug-in, WebTutor 3.7, WinOptimizer 99 Deluxe 1.0, WinTabs 1.3.1

Mac: AceReader Demo 1.1.0, Archive 4.1, DeskBots 1.6.1, Flash Writer 1.0, Gifmotion (FAT) 2.3.2, HelpDesk 9.99, MacOS Items Manager 1.5.1, MacTidy 1.0 Beta 4, MP3 Rage 1.1, MultiTimer Pro 3.5.1, NetCloak 3.0.3, Painting 1.6.4, people Book 3.0 Beta 2, ProjectPlanner 1.2.4, Restore Desktop 1.0, SimpleVCD 2.1, Sound Studio 1.1, Storeys 1.5.1, Word Merge Pro 1.5, ZipIt 1.4

Linux: Aurora (redhog.b), Bluefish 10.2, CompuPic 4.6 Build 1022, Configure-It 1.0, Enlightenment 0.16.0,

Eucalyptus 1.1.0a2, Get Pop 0.2, gIFtpD 1.71.1, G-man 0.0.7, gnomba 0.5.0, Gzilla 0.3.8, kruiser 0.4 (prerelease 1), Root Portal, SETEdit 0.4.35, shThemes, Tgif 4.1.22, tkbabel/tclbabel 0.3, TKRIO 1.03, Webmin 0.74, xILhtml 0.2.0

Handhelds: ASTROCKS (Enhanced MX version), Clocks, Graph 4.0, Merger 6.0, Pocket Bank 2.0; AddressPro 3.5, Mini-Book 1.7, TealGlance 3.23, TetrisV 1.05, Time; Tascal Folder Sync 1.10, Tascal-RegEdit 0.52, The Safe 2.3, Windmill 1.0

DESKTOP UTILITIES

BeDeamon 1.33, Buzof 1.46, Cascade 1.0, Cookies 2.0, CoolDesktop 2.5, CopyURL 2.2.1, Desktop Menu 1.0, Desktop News 1.1f, DeskTopia 1.03, DoubleDesktop 1.1, E-Icons 98 2.17, enable Virtual Desktop 2.1s, EntryPoint Beta, Europa 0.1 (pre-alpha), goScreen 2.7, High Voltage Desktop 1.0, Internet Commander 3.0, Invisible Pro 3.0.1.2, Jotter 1.71, Master Control Panel 3.0 Beta, PowerBar 1.80, PowerPro 2.1, QuickDesk 1.1, Quick Tray 2.0, RipBAR 2000 (Build 3317), SecurDesk LV 3.1, SoftProfile Juggler 1.0, StickyFront 0.4, Talisman 1.3, Taskmenu 3.5 and more

SCREENSAVERS

3D Dissolve, 3-D Fotocube, Adams Golf, Alien Worlds, Baseball, Christmas, Climber Saver, Desktop Destroyer, Distant Suns, Earth Screen Saver for Windows, Earth Views, Festive Fun, Fractal Clouds, Habitat Sunset, ScreenSmelter, Wheels Collection, Sunsets and Flowers, Yuletide Scenes


THEMEZONE

A Summer Place, Africa, Alien Jazz, Ally McBeal, As Time Goes By, Batik


Continued on page 10

Aladdin Ghostscript 5.50

In *Australian Personal Computer's* September 1999 issue cover CD (disc 1) contained Aladdin Ghostscript 5.50. Unfortunately, we omitted to include the source code as part of Ghostscript, and we did not make its licensing terms clear enough. Aladdin has a very favourable licence for use of Ghostscript, a term of which allows you to copy and distribute the program including source code. You will find the complete source code on this month's CD (disc 2) in the /GS directory, and the text of the Aladdin Free Public Licence in the directory /GS/public. APC apologises for any inconvenience caused through our omission of source code and/or printed reference to the licence.



With 8 office
machines in one,
Brother gives
your business
a helping hand.



Introducing the MFC-7160C 8-in-1 Multi-function Centre™.
It's every machine your business needs in one.

Including:

- A high speed colour printer which delivers at 1440dpi resolution with studio quality colour
- A colour digital copier which can enlarge up to 200%
- A colour scanner
- A plain paper fax
- A PC fax

- A Message Centre™ with built-in answering machine
- A speaker phone
- A unique colour video printer allowing you to print straight from your digital/video camera. Now that should lighten your load. For further information please visit www.brother.com

You can always rely on your **brother.**

Continued from page 8

Butterflys, Beach, Beck Theme, Big Daddy Desktop Theme, Cardinals in the Snow, Christmas Globe, Christmas 2 Theme, Christmas 5 Theme, Christmas 6 Theme, Computer City, Daisy Patch, Dolphin, Extreme Pinball, F-Flame, Final Fantasy VIII, Goofy and Donald, Halloween, Grinch Stole Christmas, In the Mouth of Madness, Jackie Brown Desktop Theme, Jennifer Lopez, Lin'Air, Linuxberg, Machine Hunter, Mr Bean Theme 2.0, Need For Speed III, Party Animals, Picasso Theme, Pocket Monster, Porsche Boxster Theme, REM and more

GAMEZONE

Starfleet Command, Street Wars: Constructor Underworld

WORKSHOP

Windows: Master Converter 2.11, The Electric Mind 1.1, Pretty Good Solitaire 99 5.1.1, AceReader 4.1, WinRescue 98 B.09

Mac: Iconographer 1.0.2, Drop Drawers 1.0.1, Screen Catcher 1.5, Sleeper 3.2 Beta 5, Clean-Install Assistant 1.1, File Smiler 1.6.1, Decoder 2.0.4

Linux: Xsnow, mtools, bashrc, CBB

OS/2: Binary NewsReader 1.37, NewsBeat 1.00, PMNews, ProNews/2, Dialog Enhancer '99

INTERNET TOOLKIT

Adobe Acrobat Reader 4.0, Eudora Light 3.06, Free Agent 1.11, GoZilla 3.5, mIRC 5.6, RealPlayer G2, WinZip 7.0, WS FTP LE 5.06

BROWSERS

Microsoft Internet Explorer 5, Netscape Communicator 4.7, Netscape Communicator 4.08, Netscape Navigator 4.08

DISC 2**CLEAN PC**

4DiskClean 1.2, Add/Remove Pro 2.03, ASHAMPOO 99 Deluxe 1.0.0.2, Clean

apcmag.cd December sponsors

Disc 1 Olympic System Configurator, Gateway, dingo blue

Disc 2 OneNet, OzEmail, IPRIMUS, Telstra Big Pond, TPG Internet

System Directory 1.7, CleanMenu 1.0, CleanTemp 1.0, Disk Space Recovery Wizard 2.52, Disktective 3.2, DLLAide 1.14.0, Folder Cleaner 2.01, KMCS CleanWin 1.66, NT Perfect Companion 2.1, 4DiskClean 1.2, WashAndGo 1.0a, WinOptimizer 99 DELUXE 1.0

JOBSEEKER TOOLKIT

All-Purpose Resumes 1.01, CallCenter 3.5.7.5, Career InfoFinder 1.4, Easy Mail, eCVxpress 1.1, eVis 2.0, FaxLauncher Light 3.01, Just The Fax 2.Bd/c, Mario Teaches Typing, Mr Envelope 2.5, Power Typing for Windows 4.2, Presentation Publisher 2.6, Resumail 3.0c, Resume Master Deluxe 4.0, All-Purpose Resumes 1.01, Ten Thumbs Typing Tutor 2.0, The Right Resume 4.0, Visual Business Cards 3.2 Beta, Web Resume Writer 2.0.15, WordExpress 2.02, Wordware for Word 97, WriteExpress Easy Letters 2.1

COLLECTION ORGANISERS

Amigo 5.0, CATraxx 2000, CD Box Labeler Pro 1.2, Enfish Tracker Pro 1.1, LabelWizard Label Designer 1.13, Music Label 2000, Music Wizard 5.0.1d, Now You're Cooking 5.12, ORGANIZE! Your Music 5.1B, AccuChef 5.05, Recipe Processor 3.0, Staccato Notes 1.0, TrainingBase 4.1.2

HOME PAGE STARTER KIT

3003 Background Images & Sounds, Active TrafficBuilder 1.9, Animagic GIF Animator 1.06a, Arachnophilia 3.9, CoffeeCup HTML Editor Pro 7.0, CyberSpyder Link Test 2.1.7, DragDrop FTP 2.0.2, FTP Voyager 6.2, HomeSite 4.0, HotDog PageWiz 1.0, NoteTab Light 4.6

TUTORIAL PROGRAMS

Advanced MFC Programming 1.0, Beginning Visual Basic 1.0a, C tutorial 2.8, HTML In Review 1.0, Introduction to TCP/IP Programming, Learn Visual Basic 6 1.5, L-Nix 1.20s, Pascal tutorial 2.61, Really Basic BASIC 1.1, Thinking in Java (HTML format), VBA Tutor (Part One)

ESSENTIAL UTILITIES

Black Hole Organizer 1.52, ClipMate 5.1, CuteFTP 3.0, GetRight 4.1.1, McAfee VirusScan 4, NoteTab Pro 4.6, Paint Shop Pro 6, SpaceHound 32 3.0, WinZip 7

SHAREWARE GAMES

Bricks '2000 1.1, Bubble Puzzle 97 1.3c, Casino Verite Blackjack 2.04, Chess-it! 3.0, David's BackGammon Game 2.B.B, Deep Green Reversi 4.1.1, DX-Ball 2.1.2, Free Solitaire 3.0, SolSuite 2000 4.4

READER REQUESTS

Adobe ActiveShare 1.1, Attach Objects for Dreamweaver, ConnectPal Professional 6.40, DirectX Drivers 7.0, Macromedia Director 7, pcANYWHERE 9.0, Visual Day Planner 6.3, WinFax 9.0

PLUS... WEIRD & WACKY, CLASSICS, FREWARE AND APC STAFF PICKS**DISC 3****VIRTUAL PETS**

Blobbos 1.0, Catz II 2.0, Chilean Rose Tarantula, Crying Screaming Baby 1.0, Dalmatian Adoption 1.0, Electronic Smile 1.0, eSheep, Global Pets 98 1.0, MOPy HP Virtual Pet Fish, Mr Clown 2000, VirtualFriend 2.0.6, VirtualHamster 1.3.2

KIDS GAMES

2 Clear 1.1, 21st Century Sailing Simulator 1.8, 360 Ultimate Spinball 1.0, 3D Space Fighter 1.0, Battle for the Universe 1.1, Bingo Buddies 1.0, Blast Thru 1.11, Boabite3D, BrickBreak 1.0, Bub and Bob 1.5, Burning Monkey Solitaire 2.2.0, Dirt Bike 3D, Elroy Apparellizer 1.0, Gap Sk8er 2, Goofy Golf Deluxe 1.0.1, Jigsaws Galore 3.0, Jungle Chess 1.0, Passage 3 1.53, Santa's Secret Valley 2.0

KIDS ART

Attack of the 50ft Chicken, Coloring for Children, Crayola Print Factory, Flying Colors, Funny Face 1.0, Great Adventures Western Town, KidLabel, Kids Animation Maker 3.2, Monstrous Media Kit, Music Brush 2.0 Screen Saver Designer, 3D Movie Maker, Rainbox, The Simpsons Cartoon Studio, ToonWorks, WizKid Painter, Xmas Tree

KIDS EDUCATION

AZZ Ware 3.2.0, Arithmetic Review 2.0, Bardusa, Checkers' Village 1.0, Magic 3D Coloring Book, Dr. Seuss Hamulator, Eddie & Minx: Map Game, Essay Punch, Grammar Renegades (Level A), HeartBeeps, Kids Talking Time Tutor, Math Stars 4.0.2, Mathematics Worksheet Factory Deluxe 1.61, Maths Shop 1.0, Music Ace 2.0, Primary Learning 5.0, Spelling Buddy 2.2, Twistory 2.0, TykeWriter 2.1.0, Wonka Trivia 1.0

COREL WORDPERFECT OFFICE 2000 TRIAL VERSION



10099 AORTA8498E The Intel Inside Logo and Pentium are registered trademarks and Celeron is a trademark of Intel Corporation.



ENVY

If you're a mover and shaker Satellite gives you total freedom and flexibility with its Intel® Pentium® II or Intel® Celeron™ processors at 400MHz, DVD and built in modem. You're carrying technology so impressive, it'll make anyone jealous.

Satellite 4000 series: • Intel® Pentium® II processor 400MHz or Intel® Celeron™ processor at 400MHz • 64MB memory • Triple spindle design with integrated floppy diskette, hard disk (4 or 6GB) and CD-ROM or DVD models • 14.1 inch colour active matrix TFT screen • Enhanced bass response stereo speakers for high impact multimedia • Built in 56K modem • Battery life up to 2.5+ hours.

Satellite 2590: • Intel® Pentium® II processor at 400MHz or Intel® Celeron™ processor 400MHz • 64MB memory • Triple spindle design with integrated floppy diskette, hard disk (4 or 6GB) and CD-ROM or DVD models • From 12.1 to 14.1 colour screens • Battery life up to 2.5+ hours.

TOSHIBA

FRIEND

1800 021 100 www.isd.toshiba.com.au

What's on the apcmag.com family of sites

apcmag.com

<http://apcmag.com/>
apcmag.com is Australia's most popular technology site. The site has lively discussion forums and Web-only reviews and columns, as well as a complete archive of every article that has run in the magazine over the past three years.



Newswire

<http://newswire.com.au>

APC's Newswire service offers the most comprehensive online technology news coverage in Australia. Newswire is the only 100% local IT news service, and is updated continuously throughout each business day

so you can keep up with all the latest developments.



apcmag

COMING UP

PDAs: In January we'll review the latest crop of handhelds, looking at both Windows CE and Palm OS devices. Along with the reviews, our cover CD pack will contain a bevy of useful applications for your new palmtop.

Home entertainment gear: For the holiday season, we've looked at a range of products that will improve your home entertainment experience. We'll be providing a review of large screen monitors — 19in and more. Next, we'll be locking our reviewers in a room with a whole bunch of game controllers, from steering wheels to joysticks and gamepads, and taking them for a test drive. Finally, we'll be taking a quick look at some of the speakers on the market right now, from USB products to full sound systems.

Online radio: What is it, and where is it heading? APC explores what is most likely the future of radio broadcasting, where the listening options are potentially limitless. Our cover CD pack will also feature the latest in client software, so you can experience what online radio has to offer for yourself.

All this plus news, views, reviews, CDs and more in APC January, on sale December 23.

CONDITIONS OF ENTRY

These conditions apply to all competitions in APC December, unless specific conditions are provided with the competition. Instructions on 'How to Enter' form part of the Conditions of Entry of all competitions in APC December. Entry is free and open to all residents of Australia other than employees of APC Publishing Pty Ltd (ACN 053 273 546), suppliers of competition prizes, their families and associated agencies. The contents close last mail December 22. Enter according to the instructions supplied with the individual competitions. The judges' decision is final and no correspondence will be entered into. No responsibility is accepted for late, lost or misdirected entries. All entries become the property of APC Publishing Pty Limited, the promoter, 54 Park Street, Sydney, NSW 1028. The prizes are not transferable or redeemable for cash. Any change in the value of the prizes occurring between the publishing date and the date the prizes are claimed is not the responsibility of the promoter. Winners will be notified by security post and their names published in February APC.

apcmag
Newswire.
newswire.com.au

100% Australian

100% authoritative

100% online

ACP
Tech

You won't know
what hit you!

Get the
news as it happens



PRIDE

Stand out from the masses. The new Tecra range has models with Intel® Pentium® III processor at 500MHz and 3D graphics accelerator, which means no longer being chained to the desk. You're not carrying a nice accessory, you're carrying your office. It's time to strut your stuff.

Tecra 8100: • Intel® Pentium® III processor at 450 MHz or 500 MHz • 6 to 12GB hard disk drive • S3 Savage MX 3D hardware graphics display controller • 64MB SRAM memory expandable to 256MB • 14.1 inch active matrix TFT display • CD-ROM drive or DVD-ROM drive • Battery life 3+hours with ACPI power management.

Tecra 8000 series: • Intel® Pentium® III processor at 500MHz, Intel® Pentium® II processor at 400 MHz and Intel® Celeron™ processor at 400 MHz • 6.4 or 10GB hard disk drive • 64MB SRAM memory expandable to 256MB • 14.1 inch active matrix TFT display • CD-ROM drive or DVD-ROM drive • Integrated modem models • Battery life 3+ hours with ACPI power management.



TOSHIBA

FRIEND

EDITORIAL

Editor
(02) 9288 9121
Deputy Editor
(02) 9288 9175
Senior Writer
(02) 9288 9130
Senior Reviewer
(02) 9288 9115
Features Writer
(02) 9288 9160
Journalist
(02) 9288 9116
Journalist
(02) 9288 9154
Technical Assistant
(02) 9288 9164
Contributing Editors

Editorial Assistant
(02) 9288 9123

PRODUCTION

Chief Sub-Editor
(02) 9288 9126
Sub-Editor
(02) 9288 9122
Sub-Editor
(02) 9288 9125
Sub-Editor
(02) 9288 9176
Sub-Editor
(02) 9288 9123
Art Director
(02) 9288 9127
Artist
(02) 9288 9123

ACP TECH

CEO
Group Publisher
Publishing Director
(02) 9288 9124
Consulting Publisher
Advertising Director
(02) 9288 9120
Electronic Media
Manager
(02) 9288 9192
Web Editorial Director
(02) 9288 9172
Print Production Editor
(02) 9288 9177
Electronic Production
Editor
(02) 9288 9109
New Projects Manager
(02) 9288 9105
Labs Manager
(02) 9288 9199

Steven Fear
sfear@acp.com.au
Nathan Taylor
ntaylor@acp.com.au
Simon Vandore
svandore@acp.com.au
Darren Ellis
dellis@acp.com.au
Josh Mehlman
joshm@acp.com.au
Alex Kidman
alexk@acp.com.au
Andrew Colley
acolley@acp.com.au
Ryan Shaw
rshaw@acp.com.au
Jeremy Torr
Stephen Withers
Laura Kane
lkane@acp.com.au

Vanessa Richardson
vrichardson@acp.com.au
Glenn Phillips
gphillips@acp.com.au
Vanessa Fazzino
vfazzino@acp.com.au
Gail Lipscombe
glipscombe@acp.com.au
David Hovenden
dhovenden@acp.com.au
Ashlea Miller
amiller@acp.com.au
Craig Carroll
ccarroll@acp.com.au

John Alexander
jill Baker
Glenn Rees
grees@acp.com.au
Jeremy White
Mark Harrison
mharrison@acp.com.au
Matt Bateman
mbateman@acp.com.au
Angus Kidman
akidman@acp.com.au
Kevin Pyle
kpyle@acp.com.au
Andrew Broadhead
andrewb@acp.com.au
Helen Duncan
hduncan@acp.com.au
Ari Weisz-Koves
awk@acp.com.au

NEWSWIRE

Editor
(02) 9288 9172
Deputy Editor
(02) 9288 9104
Journalist
(02) 9288 9161
Journalist
(02) 9288 9163

CD TEAM

CD/Web Assistant
(02) 9288 9110
CD/Web Assistant
(02) 9288 9199
CD/Web Assistant
(02) 9288 9199
CD/Web Assistant
(02) 9288 9110
CD Assistant
(02) 9288 9199

POCKETBOOKS

Editor
(02) 9288 9188
Deputy Editor
(02) 9288 9132
Artist
(02) 9288 9123

ADVERTISING

National Advertising Mgr Mark Harrison
(02) 9288 9120
Senior Brand Manager
(02) 9282 8696
Senior Account Manager
(02) 9288 9143
Senior Account Manager
(02) 9288 9149
Account Manager
(02) 9288 9157
Vic & Tas Sales Manager
(03) 9823 6382
Sales Qld
(07) 3000 8500
Sales WA
(08) 9481 4127
Sales SA
(08) 8361 9999
Marketplace/Account
Manager
(02) 9282 8975
Advertising Production
(02) 9282 8626

Australian Personal Computer is published by ACP Tech, a division of ACP Publishing Pty Ltd (ACN 053 273 546). Printed by Hannamprint Pty Ltd. Material contained within Australian Personal Computer is protected under the Commonwealth Copyright Act 1968. No material may be reproduced in part or in whole without the written consent of the copyright holders. Distributed by Network Distribution Company, 54 Park Street, Sydney, 1028. Phone: (02) 9282 8777

Angus Kidman
akidman@acp.com.au
Roulla Yiacoumi
ry@acp.com.au
William Maher
wmaher@acp.com.au
Cosima Marriner
cmarriner@acp.com.au

Suzanne Quill
squill@acp.com.au
Dan Lowden
dlowden@acp.com.au
Jonathan Kinred
jkinred@acp.com.au
Nola Camden
ncamden@acp.com.au
David Slatter
dslatter@acp.com.au

Ashton Mills
amills@acp.com.au
Lindsay Hayman
lhayman@acp.com.au
Niki Creed
ncreed@acp.com.au

Paul Trachtenberg
ptrachtenberg@acp.com.au
Sumit Roy
sroy@acp.com.au
Alison Watson
awatson@acp.com.au
Justin Cain
jcain@acp.com.au
Julie Dominguez
jdominguez@acp.com.au
Noel Fitzpatrick

Diane Slade
Chris Arnoul

Nicholas Riviere
nriviere@acp.com.au
Peter Slingo

CONTACTING APC

For general queries and comments, email is APC's preferred means of communication:

apc@acp.com.au

You can also use the feedback form on our Web site:

apcmag.com/feedback

Reader inquiries/back issues

Contact Laura Kane
Phone (02) 9288 9123
Email lkane@acp.com.au
We run out of most issues quickly, so please contact Laura Kane before sending a cheque. Copies of old issues of APC are available at most local libraries.

Reprints and copyright

Contact Margie O'Grady
Phone (02) 9288 8552

Sydney office PO Box 4088,
Sydney NSW 1028
Phone (02) 9288 9123
Fax (02) 9264 6320
Melbourne office 102 Toorak Road,
South Yarra Vic 3141
Phone (03) 9823 6333 Fax (03) 9820 1134

SUBSCRIPTIONS

Subscribe and save 32% from the cover price. One year for only \$72!

Toll free 1800 252 515
Sydney 9260 0000
International (+61 2) 9260 0000

Email subquery@acp.com.au or visit
<http://apcmag.com/shop/>

For full details see our subscription ad on page 128.

Note The above email address and phone numbers should be used if you have a problem or inquiry regarding an APC subscription. Please do not direct subscription queries to the editor.

EDITORIAL SUBMISSIONS

Please let us know if you have an idea for an article or review you'd like to write, or that you'd like to see us cover in APC.

We appreciate submissions, but can't guarantee a reply. Please send (preferably by email) a brief résumé with an outline of your experience and interests, and a sample of your writing with an outline of the article you have in mind.

Press releases can be sent via email to press@acp.com.au or to one of the specific section editors listed at left. Please note that due to the volume of mail we receive, we are unable to confirm receipt of releases. Feel free to contact us for a copy of the APC Tech Media Kit.



Video. Camera.

Think of it as two digital cameras for the price of one. First, it's a video camera. Secondly, it's a still camera. Of course, both offer the superb picture quality and ease of use you'd expect from a Carl Zeiss lens. But thirdly, and perhaps most importantly, the DCRTRV10 is one of the most technically advanced cameras in the world. Because it's the first to incorporate 'Memory Stick' technology. One Memory Stick, although smaller than a stick of gum, can store more data than 11 floppy discs*. So with the adaptor provided, it will revolutionise how you store and transfer data between the camera, your PC and printer. But the applications for Memory Stick go way further. From editing, to sending emails, to even creating presentations and websites. With this sort of potential, you could say the DCRTRV10 is the first camera that lets you see into the future. **It's a Sony.**

SONY.

* When using MSA-16A (16MB)

Advertisers' index

3Com	105	elisa	203	Microsoft	7, 97	CHANNEL	
3M	87	Electronic Arts	211	Mitsubishi	29	AVO	169
Acco Australia	86	Elite Industries	113, 130, 131	MSI	108, 109	Forte	170, 171
ADM	161	Epson	35	NEC	67		
American Power	117, 119, 121	Focal Point	103	Net Registry	75	PC SUPERMARKET	
Beyond	111	Gateway	32, 33	Ocean Office	144, 145	PC Club	172
Blue Ridge	168	Gigabyte	78	Olympic Technology	155	Sigmacom	173
Brother	9	Global Business	152, 153	OzEmail	2, 3	City Software	174, 175
Canon	51, 53, 55, 57,	Hasbro	122	Pioneer	148	New Reality	176, 177
	59, 61, 63	Hewlett-Packard	46, 47,	Sony	15, 27, 42,	Nasa	178
CETDC	115		76, 77		74, 85, 101	Mail Order Software	179
ChaosMusic	120	Hitachi	68, 69	Synnex	149	PAW Products	180 to 183
Compaq	30	Intel	93, 95	Telstra	21, 73	Australian Computer	
Compucon	25	Iomega	41	Toshiba	11, 13	Recyclers	184
Dell	IFC, IBC, gatefold,	IT Artvision	123	TPGI	OBC	HK Tech	185
	90, 91	Kodak	23, 81, 83	Ulead	132	Corporate Software	186, 187
Digital Star	139	Macase	71	Ultimate Computing	99	I.Store	200
Dingo Blue	43	Magtron	137	Verbatim	45		
D-Link	16	MCT	125	Westan	19	MARKETPLACE	188 to 199
Dynalink	209	Microgram	135	Woodslane	126		

ARE YOU STILL USING 10Mb ETHERNET ?.....

D-Link 100Mb Ethernet, 10 times faster NOT 10 times the price !

The Number 1 Worldwide Selling 10/100Mb Network Adapter

DFE-530TX \$49.00*

FAST ETHERNET

D-Link
Building Networks for People

Contact your nearest Distributor or contact D-Link Australia on Freecall Australia 1800 177 100 Freecall NZ 0800 900 900

E-mail: info@dlink.com.au
Web: www.dlink.com.au

D-Link is a registered trade mark of D-Link Corporation
* Price based on RRP AU\$ ex tax

CONSUMER CHALLENGE

Compaq pauses shop plans

Compaq has back pedalled on earlier plans to open a chain of branded retail stores, and will not be opening any more of its own Compaq Connect shops "in the foreseeable future", following news of a partnership with Coles Myer.

Compaq managing director Ian Penman said the plans for a chain of shops has been put on hold. "We had not intended on opening any further stores in the foreseeable future," he said, adding that the pilot will continue to determine the venture's profitability. When the first of the specialised Compaq Connect shops opened in September, Compaq business and consumer general manager Greg Healy said the company hoped to have 120 shops in operation across Australia in the next year (as reported in APC November, page 17).

Penman made the comments after days of speculation that Coles Myer and Compaq had gone separate ways because Coles Myer didn't want to face direct retail competition from a supplier. Under the

SENATE SLURS AND LEGAL LOOPHOLES

Net censorship concerns increase

There is less than a month to go before Net censorship legislation becomes law in Australia, and the Federal Government is still facing a barrage of criticism over its controversial control proposals.

IT minister Senator Richard Alston has come under fire in the Senate for falsely claiming support for the Broadcasting Services Amendment (Online Services) Act from a number of major international companies and for describing one group opposed to the law as "maniacs". Meanwhile, an analysis of the law suggests that far more companies may be affected by the legislation than originally anticipated.

In late September, a motion was put forward to the Senate by ALP Senator Mark Bishop on behalf of Democrat Senator Natasha Stott Despoja. The motion asked the Government to immediately address the concerns raised by industry and the community about the unworkable nature of the Government's approach and the act in general; urgently revisit

aspects of the act prior to its commencement on January 1, 2000; and table a report on the effectiveness and consequences of the act in the Senate at six-month intervals from the date of the regulatory regime's implementation. The motion was passed 32 votes to 29.



Alston, the architect of the act, said that although the Senate's motion was "fundamentally misconceived", he would be "delighted" to table reports every six months. However, he caused more concern when he claimed that the new legislation was supported by Lotus CEO Jeff Papows.

He quoted Papows as say-

ing, "Industry has no issue with online content regulation. The industry endorses content regulation."

That assertion was flatly denied by Lotus officials. Bryan Simmons, Lotus vice-president of worldwide corporate communications, said that the company did not "in any way regulate the distribution methods used by our customers based on the content of the material, or suggest or dictate these to governments".

Simmons said this is the role of each country's elected representatives and not a role Lotus seeks to play. "Jeff's comments were meant only to communicate deference to the government's sphere of sovereignty, not support any government's particular policies," he said.

This was not the first time a high-profile business has contradicted the minister. In June, while on a trade mission in the US, Alston claimed Yahoo "generally endorsed what we were doing" in terms of the legislation. The comments were later dismissed by Yahoo. Alston

Continued on page 18

Continued on page 18



Looking for the latest technology news and an analysis of how it will affect the Australian IT community? Then look no further than NewsWire, Australia's only continuously updated, dedicated technology news Web and email service.

In response to reader demand, we've recently introduced a number of new columns, including Stock Watch, which tracks the performance of leading local technology companies, and Nightwire, a rapid-fire review of overnight world news published on the site about 9 am each day.

NewsWire is a 100% local service that has been designed to take advantage of the online medium. Visit it today at <http://newswire.com.au>.

Recent stories appearing only on NewsWire include:

Care to visit the Sportal?

<http://newswire.com.au/9910/sportal.htm>

Apple unveils sub-\$2,000 iMac

<http://newswire.com.au/9910/apimac.htm>

NetAid: Feed the world online

<http://newswire.com.au/9910/netaid.htm>

DisGust: Digital celebrity

<http://newswire.com.au/9910/ds12.htm>

Compaq pauses shop plans

Continued from page 17

renewed partnership, however, the two companies are "exploring opportunities to improve delivery of products and services and generate new revenue" in the small business and consumer markets, according to a statement issued during the height of the controversy.

Penman (pictured) said the partnership with Coles Myer is not new and that it cements Compaq's commitment to Australia's largest retailer.

Penman said discussions with a number of partners will continue. "We have been in discussions with Ron Harris over the past two weeks," he said. Penman declined to comment on whether Harris Technologies, which ceased selling Compaq desktops, would once again stock the products.

Harvey Norman, a former Compaq partner, ceased selling Compaq machines in August after the PC company confirmed plans to open its own chain of shops. Compaq's business with Harvey Norman was rumoured to be worth about \$100 million. When asked if talks with the retailer would resume, Penman laughed. "We can't really comment on that," he said. "It was not our choice to withdraw from Harvey Norman—it was their decision to withdraw from the relationship."

New approaches

Compaq's change of heart reflects the growing difficulties PC vendors have selling directly to consumers. Although other companies haven't gone to the extreme of opening their own shops,

unusual partnerships are being pursued.

In one of the most unlikely collaborations seen on the tech scene for some time, IBM and AOL have teamed with Video Ezy to bring a 'free PC' entertainment package to the market. Under the terms of the deal, consumers will be able to buy an IBM Aptiva PC with unlimited Internet access from AOL, plus eight free movie hires per week from Video Ezy. The package will cost \$25.99 a week for a period

of two years. The total cost is \$2,702.96, excluding GST (which will take effect on July 1, 2000). Video Ezy managing director Peter Scicluna said the company examined Internet-related "diversification opportunities" for two years before settling on the PC/Internet/video package. "We believe it will be very successful," he said.

In the US, IBM has taken more drastic action by deciding to quit the competitive retail market to focus on Internet sales.

A US-based IBM spokesperson told APC that IBM Aptiva PCs continue to sell well internationally. "They are just not differentiated on store shelves [in the US]," the spokesperson said. IBM officials are hoping to follow Dell's footsteps and increase its profit margins by selling PCs on the Internet.

An IBM Australia spokesperson said local retail sales will not be affected by the US decision. "We see enormous strength in the retail channel," he said. "Every region is looking at what the market is demanding. In the US the move is to direct sales."

Roulla Yiacomou



Net censorship concerns increase

Continued from page 17

later repeated the claims in the Senate, saying Yahoo "thought it was a good idea".

Alston was subsequently taken to task in the Senate by Democrats deputy leader Natasha Stott Despoja, who cited a number of reports from **NewsWire** pointing to the inaccuracy of the minister's claims. "I think these are serious matters that need a response, as a matter of urgency from the minister," Stott Despoja told the Senate. "It has been widely debated online and of course in various Internet industry circles, the fact that the minister has repeatedly now not only contradicted or misrepresented statements made by company officials, but that he has done so at least on one occasion in this place."

That wasn't Alston's only problem. In a stinging attack on the civil liberties group Electronic Frontiers Australia (EFA), Alston said the group has "no interest at all" in responsible Internet regulation. He described EFA as a group of "low-grade undergraduate political activists who thought that they could get themselves a bit of a run on free speech arguments". Alston said industry is not opposed to his bill, but that "maniacs—these electronic frontiers outfits—are the ones 'running around stirring up trouble'."

The EFA subsequently exercised its right of reply to the comments. In a lengthy submission which was added to the parliamentary record, EFA chairperson Kimberley Heitman said Alston's remarks were factually incorrect. "The Senator's remarks impugn our individual good characters, reputations and credentials," he wrote. "[His] description of EFA falsely deprecates the breadth of academic and professional expertise of the EFA board," he said. "None are

undergraduates." Heitman also noted that Alston's allegation "as to our mental stability has no basis in fact".

As for claims EFA has no regard for concerns by parents, Heitman said there is a section of the EFA's Web site dedicated to informing parents how to protect children using the Internet. "This was compiled by EFA in 1996, long before any government agencies developed an interest in assisting parents," Heitman noted.

Wide scope

Meanwhile, an analysis of the Government's Broadcasting Services Amendment (Online Services) Act 1999 by the Internet Society of Australia (ISOC-AU) and law firm Phillips Fox has found up to 20,000 Australian businesses may be subject to the provisions of the act, which seeks to crack down on offensive and illegal online content.

ISOC-AU executive director Tony Hill said this figure may rise to 60,000 businesses within 12 months. "The definitions of Internet service provider (ISP) and Internet content host (ICH) are much broader than previously thought," he said. "We have communicated our analysis of the act to the National Office of the Information Economy (NOIE) through the minister, seeking advice on whether this interpretation is correct."

ISOC-AU and Phillips Fox found the act failed to provide a "meaningful" definition of 'Internet content host'. The analysis found many ISPs offer customers permanent direct Internet connections and that 'telehousing'—where the customer's server sits on the provider's network but is controlled by the customer—is becoming increasingly popular.

Roulla Yiacomou and Angus Kidman



Intel Validated Servers

Real Servers.

Real Flexibility.

Real **Value.**



Rapier Series

Intel PIII 500 MHz CPU, 128 MB System Memory, 1 x 9.1GB 7200RPM U2LVD SCSI Drives, 40x CD - ROM, 1.44 FDD, Mouse, Keyboard. *

Integrated Features

Intel Pro/100+ Ethernet Controller/Interface, Cirrus Logic GD 5480 2MB Graphics, Dual Ultra2 LVD Channels, Advanced Intel Server Management Controller.

Standard Expansion Features

Dual CPU Capable, Six PCI Slots, Supports up to 2GB RAM, Hot Swap Chassis supports up to six SCA Hard Disks, ARO Slot for Hardware RAID Upgrade.



\$4500.00
* inc tax



Call your nearest dealer for more information

Distributed by Westan Email: Sales@westan.com.au Website www.westan.com.au - VIC : Ph (03) 9543 7733 Fax (03) 9544 0602. NSW : Ph (02) 9417 2133 Fax (02) 9417 2311. QLD : Ph (07) 3846 5522 Fax (07) 3846 5544. S.A : Ph (08) 8351 6600 Fax (08) 8351 6622. W.A : Ph (08) 9445 9688 Fax (08) 9445 9699.
All trademarks, brand names and product names are the property of their respective owners.

westan

DISTRIBUTION BATTLE

Linux shake-up looms

Gartner Group analysts are predicting a major shake-up in the worldwide Linux market in the next two years. It predicts the market for the open source OS could be dominated by a handful of key distributions.

Senior analysts at a Gartner symposium in Brisbane predicted that no more than three different distributions of Linux would survive in the enterprise market past 2002. The distributions tipped to survive the shake-up in Australia are Red Hat, Caldera and possibly TurboLinux.

Senior analyst Rolf Jester issued stern warnings for Linux developers, saying that the system will never be viable as a mainstream operating system. He advised companies to limit testing during the coming year, and encouraged novice users to wait until 2001 before using the system.

Jester's remarks echoed a recent report issued by Gartner which raised the hackles of Linux developers worldwide. Those warnings don't appear to be affecting development plans, as many major hardware and software companies have recently announced plans to support Linux.



Like many industry watchers, Jester believes Linux will be confined to specific functions such as mail and Web servers. Gartner predicts that by 2003, almost 25% of "appliance servers" will run Linux, although it will only account for 5% of revenue from all-purpose servers.

Linux is also tipped by Gartner to make its mark as an embedded operating system for niche black box devices. These will be used for single functions such as email or security, and will mostly be confined to the back end of large IT divisions.

Jester also talked down the possibility of Linux distributors challenging other Unix vendors. Most independent software vendors will find it hard to commit to the platform, for fear of losing mass market customers, he said. "Our advice to the Linux community is this is where it fits. Attempts to take it upstream are probably wasted," Jester said.

Interest in Linux continues to remain strong among software developers and IT departments. At the Gartner session, almost half the audience put up their hands when asked if they used Linux at home or at work. William Maher

ANSETT, QANTAS BAIL

Y2K: The flights get cancelled

Low demand for flights over the 1999 New Year's Eve period has led to the cancellation of several Qantas and Ansett flights. However, both airlines deny that the cancellations are directly related to Y2K safety concerns.

Ansett has cancelled all commercial flights between 11pm on December 31 and midday on January 1, 2000. A Brisbane-bound flight due to leave Osaka, Japan at 8pm has also been cancelled.

A Qantas spokesperson said nine flights had been cancelled because of low demand. At the stroke of midnight Greenwich Mean Time, the airline will have 11 international and 30 domestic aircraft in the air.

The Qantas spokesperson denied Y2K fears had caused people to avoid flying on New Year's Eve. "I didn't ask those people," he said. "We have no information to suggest that is the case."

An Ansett spokesperson was more forthcoming, saying media speculation about Y2K glitches, including planes falling out of the sky, had affected flight bookings. "I'd have to concede that," he said. "It is an abnormal Christmas/New Year rollover given the new millennium."

The spokesperson said a marketing decision was made to not promote travel over that time. "People are intending on being earth-bound and somewhat closer to alcohol in that period," he said. "I think [the coming of 2000] has influenced the travel plans of many."

Both Qantas and Ansett will have key executives on alert come December 31.

In related Y2K news, Qantas has submitted its latest year 2000 advice notice to the Australian Stock Exchange. The airline

says it has developed contingency plans for some airspace. "These will come into effect two hours before midnight local time in each regulated airspace and continue for 10 hours or as long as necessary to overcome any problems," the notice states.

Some overseas critical service providers, such as airspace authorities, have advised Qantas that their Y2K programs will not be completed until late 1999.

In an earlier statement to the ASX in March, the airline warned it may reduce some domestic and international flights. "Qantas will only fly if it is safe to do so," its report states.

Roulla Yiacoumi



News Roundup

• Com Tech has joined the growing ranks of companies offering application service provider (ASP) packages. The company has formed a partnership with Professional Advantage to create a new company, Managed IT, which will specialise in ASP packages for the small to medium business sector. Managed IT has already gone live with one customer, SDI Asia Pacific, which is running a mixture of packages, including Great Plains Financials and Microsoft Office.

• Dell is poised to topple Compaq from its longstanding position as the world's top-selling PC manufacturer, according to new figures from IDC. Preliminary Q3 sales figures released by the research company show that Compaq retains the global top spot, shipping 3.8 million PCs and accounting for 13.8% of global sales. Dell is ranked second with 3.2 million machines sold and 11.6% of the market. However, Dell's sales have grown by more than 59%, while Compaq's were up by

just 20%. The overall world market grew by 20% year-on-year.

• Music retail chain Sanity, which has launched an online music sales arm, is confident its online business will not cannibalise its existing physical business. Rather than perceiving its physical and virtual outlets to be mutually exclusive, Sanity intends to blend the two to expand its overall business. As part of this strategy, Sanity will install ecommerce music kiosks in at least half of its retail outlets within 18



Big Pond

Internet Services

Whatever's
in your head,
you'll find it on **Big Pond.**

If you can imagine it, you'll find it on Telstra *Big Pond*[®] Home. With a premium 56K compatible network featuring the latest V90 technology¹, you'll be able to travel further and discover more. Cutting edge technical expertise and commitment to service guarantees a mind expanding experience.

Little wonder we were voted "Editor's Choice ISP"² by Australian Personal Computer in 1998.

Tap into the net with a free³ 50 hour trial. Simply load the CD on the cover of this magazine, or visit www.bigpond.com Big Pond. Big Possibilities.

Telstra
Making life easier[™]

1 Actual data transfer speed may be limited by the capabilities of your phone line. 2 Trial consists of 50 hours of access in your first month of membership. Normal telecommunication charges apply. Registration requires a valid credit card. Unused hours are not rolled over into the following month. ISDN and Rural Connect access not included. ³Registered trade mark of Telstra Corporation Limited ACN 051 775 556. [™]Trade mark of Telstra Corporation Limited. PURE CREATIVE TBPH6449

57% AND RISING

Net companies hit top of IPO ranks

Even of the top 10 public floats in the last financial year were from the Internet and telecommunications sector, according to a KPMG corporate finance survey.

In its first annual survey of Australia's capital markets, KPMG found Internet floats accounted for \$250 million of the \$27 billion in funds raised on the Australian Stock Exchange (ASX) in the 1998/99 financial year. "Consistent with world markets, Internet companies made their presence felt in the Australian market... with seven new listings," the survey states.

ecorp and LibertyOne were the fourth and ninth best share market performers respectively. "[It] proved to be an excellent year for Internet-related companies making their debut on the ASX," according to KPMG.

Internet companies that floated on the stock market experienced, on average, a 57% increase on their issue price upon going public. KPMG attributes the relatively high yields to strong investor support for the sector, and market inexperience in pricing Net stocks.

The greatest premium on listing was achieved by online travel agency travel.com.au, which closed 135% up on its first day of trading. However, as the

KPMG survey results indicate, that gain has been short-lived.

There has also been an increase in the number of backdoor listings on the ASX. Mining companies with large numbers of shareholders and small cash reserves usually provided the vehicles for this type of listing. "This method of listing provided a number of Internet-related companies with the opportunity to join the ASX without a proven earnings history," the report continues.

KPMG expects the number of Internet floats to increase this financial year. "Young Internet companies will continue to capitalise on relatively favourable market conditions in the next year," said corporate finance head Julian Vella. KPMG is forecasting 17 Internet companies to go public to raise a total of \$300 million in equity.

Acknowledging the partial waning of enthusiasm for technology stocks towards the end of the last fiscal year, KPMG nevertheless expects there to be sufficient support this year for more Net IPOs. "Support for this sector will increase as the market becomes more experienced at valuing Internet-related stocks," said corporate finance mergers and acquisitions head Ian Knight. Cosima Marriner



Cashbook

The market is drawing some comfort from KPMG's finding that Net IPOs are among the strongest performers (see story at left). When it made its debut on the Australian Stock Exchange (ASX) in late October, Internet investment information provider Online Trading Systems (OTS) quickly managed a 16% premium to its issue price.

In an offer underwritten by Tricom Securities, the company issued 20 million shares at 50 cents each. This gave OTS a market capitalisation of \$20 million when it floated half of the company on the ASX.

The success of the OTS IPO was predictable considering the company's share offer closed oversubscribed, and that fellow financial information provider InvestorWeb achieved a 25% premium on listing. OTS intends to use the proceeds of its float to finance the expansion of its service into Asia and the US. The company posted revenue of \$1.3 million last financial year, and netted a profit of \$332,880.

Lake Technology, the developer of a system to deliver Dolby surround sound through normal headphones, is also going public to raise \$5.5 million. Established in 1991, Lake develops digital

communication software and exports its products to Japan, the US, Europe, Korea and Singapore. Lake is issuing 11 million shares at 50 cents each to raise \$5.5 million. This will give it a market capitalisation of \$52.4 million when it floats 10.5% of the company on the ASX in early December.

Listed ISP eisa announced a deal with the ANZ bank to provide a secure payment gateway for its ecommerce services. eisa will use ANZ's eGate product to verify and authorise customer payments at its Web sites. These include technology shop theshop.com.au and online trading service Stock Shop. eisa is forecasting \$40 to \$50 million worth of

transactions will pass through the eGate system within the next year. eisa chief executive officer Damien Brady said the deal with ANZ is central to the company's ecommerce strategy, as it would reassure customers about the safety of their transactions with eisa.

For up-to-the-minute financial news from the IT sector, check out Newswire's continuously updated Cashbook service at <http://newswire.com.au/cashbook/>.



News Roundup

months, offering online event booking, artist chat, concert streaming and refund and exchange services.

● US auction giant eBay is confident of success in Australia, despite being one of the last major auction companies to enter the local market. The company launched its Australian auction site in early October, ending months of speculation by industry watchers. "I don't think we have to play

catch up," said Australian managing director Alison Deans. "You have the widest selection of items, the widest market to sell to and the benefit of four years of experience." According to the company there are over 20,000 locals registered with the US service.

● Gartner Group has issued Australian businesses with a stern warning to avoid the first release of Microsoft's Windows 2000 operating system. Senior Gartner

executives said that Australian businesses should not consider using the new operating system until at least six to nine months after its release. For enterprises with more than 50,000 users, Gartner recommends waiting 12 to 18 months before deploying the software.

For complete versions of these and many other stories, be sure to check into <http://newswire.com.au>.

The power to Burn.

IS EVERYTHING POSSIBLE? With the Kodak 4804IDE Compact Disc writer you can record, store and share CD-ROMS, audio CDs, video-CDs and re-writable CDs. EVEN AUDIO? Simply connect to your Hi-Fi with the cable supplied (you'll need a 16-bit sound card or better) and cut an audio CD on the spot with EO, fades, track breaks and no pops or hisses. EASY DIGITAL IMAGING? Just use Gazo software to save images into albums, add sound annotations, create calendars, web pages and even short animations. TOUGH? Of course - it's a Kodak product. SUPPORT? Sit back and relax, you'll have all the personalised technical support you need. So, whatever it is you want to do, with the Kodak IDE Compact Disc writer:

the choice is yours.

FOR MORE INFORMATION ON OTHER KODAK DIGITAL PRODUCTS CALL 1800 674 831 www.kodak.com



CAUGHT SHORT UNTIL 2005?

No end in sight for IT jobs crisis

Analysts have warned that the skills crisis affecting the Australian IT industry could continue until at least 2005. They say that shortages will continue well beyond the Y2K crisis and through 2003. Further, it's predicted that by 2005, demand for specialised IT workers will continue to outstrip supply by 20%.

The blunt warning was issued to more than 1,500 attendees at Gartner Group's annual IT expo in Brisbane. Asia-Pacific region research chief Bob Hayward (pictured) told the gathering that unless the industry takes immediate steps, the problem could worsen. "We are losing the battle to attract people to this industry," he said.

The news is good for IT students, but it could cause problems for many inhouse IT workers. Hayward suggests that by 2002, 80% of businesses will begin outsourcing specialised IT operations. "The number of people on the internal IT payroll may very well shrink," he said.

According to current estimates, there are about 30,000 unfilled positions within the Australian IT industry. Gartner is not the first group to predict that the situation will get worse; IDC has already estimated

that there might be a worldwide shortage of at least 1.5 million workers by 2002.

Despite the dire warning, Gartner predicts a bright future for other industry areas. Most prominent is the prediction of a massive boom in ebusiness operations. By 2005, Hayward predicts that ebusiness will account for almost 10% of worldwide GDP.

Nevertheless, he warns that Australia ecommerce operators are in danger of being swamped by US operators. Hayward said that 30% of Internet startups would shut down in three years unless investors are attracted to Australia. "We are the corner store, and we are being put out of business by the Wal-marts of America," he said.

The move to ecommerce is also affecting the jobs market in other ways. In its first Job Advertisement Series incorporating data from the Internet, the ANZ Bank has found there are more jobs advertised online than in newspapers.

According to the bank's figures, the



number of positions advertised on the top four recruitment Web sites averaged 44,238 a week during September, compared to the 33,445 advertisements found in newspapers for the same period. Similarly, the online medium recorded a 9.4% increase of job ads from August to September, compared to the 3.8% growth in the print medium.

The bank is cautioning against ascribing any economic meaning to its results at this stage. "The only economic conclusion I would draw is that employers' acceptance of the Internet as a mechanism for

reaching potential employees is growing very rapidly," said ANZ chief economist Saul Eslake. "I would discourage [concluding] the rapid growth in Internet advertising reflects growth in demand for labour is likely to be even faster than the growth in newspaper advertisements suggests."

William Maher and Cosima Marriner

HDTV A NO-NO?

Commission moves on digital TV

The Productivity Commission has recommended against imposing high definition television (HDTV) as the standard for the introduction of digital television.

"Digital technology opens up possibilities for new and improved broadcasting services that we could only have dreamed about a few years ago," said presiding commissioner Professor Richard Snape, following the release of the commission's draft report on broadcasting. "These include better TV reception, more channels, interactive services and greater diversity and access to broadcast programming. In short, much more choice."

In order to take advantage of these new services and to ensure the speedy conversion from analog to digital television, the commission said digital must be affordable to the community.

For this reason, the commission has rejected proposals to adopt HDTV as the

digital television standard. According to its findings, the \$1,000 cost of conversion to HDTV will make it too expensive for 95% of Australians. In addition, the commission said the large amounts of broadcast spectrum consumed by HDTV will prohibit the introduction of other broadcast services.

Instead, the commission recommends standard definition digital television (SDTV) be implemented. According to the commission, SDTV does not preclude any of the benefits of digital television, such as interactive services, more channels and improved reception. Snape said consumers would need to spend at least \$8,000 before the HDTV image quality noticeably bettered that of SDTV. The conversion cost for SDTV amounts to less than half that required to adopt HDTV.

The commission also cited the US experience where consumer take-up of HDTV sets has been low. It is favouring the UK

model, where SDTV is the specified norm. The commission said the little research which has been done into local demand for digital television services has revealed that multichannelling and interactive services are far more appealing to consumers than improved audiovisual quality.

"Australian broadcasting is at a crossroads and decisions taken now will affect the opportunities for Australians from digital broadcasting for many years to come," said Snape.

One media player with an interest in the outcome of the Productivity Commission inquiry into broadcasting, Fairfax, has welcomed the findings. "The recommendations on datacasting validate the chorus of consensus on the key issues," said Fairfax chief executive officer Fred Hilmer. "If embraced by the Government, they would facilitate access by all Australians to the digital television age."

Cosima Marriner

step boldly into the new millennium

You can rely on Compucon to see you safely into the next millennium and beyond.

Using only best-of-breed componentry and featuring leading-edge technologies like the Intel® Pentium® III Processor 600MHz, Compucon products have the performance and reliability you need to succeed at the dawning of a new age.

Don't entrust your future to anything less than a Compucon.



CALL COMPUCON FOR YOUR NEAREST DEALER

- | | |
|---------------------------|----------------------------|
| ■ SYDNEY (02) 9417 7166 | ■ MELBOURNE (03) 9870 5567 |
| ■ ADELAIDE (08) 8374 1981 | ■ BRISBANE (07) 3856 0999 |
| ■ PERTH (08) 9244 3400 | |

The Intel Inside logo and Pentium are registered trademarks of Intel Corporation.



COMPUCON
21st Century Solutions

Application service provision is the latest computing buzzword, but even as the first services are rolled out, numerous questions remain.

Host of challenges for ASP crowd

Kent Duston knows he has a difficult task. "We're effectively asking customers who don't exist today to buy a product which they've never heard of," he commented, only half joking.

In his role as general manager for ASP services at Solution 6, Duston is responsible for the company's foray into application service provision (ASP), where customers rent applications from an external provider rather than purchasing and installing them locally. In late October, Solution 6 rolled out its ASP service, Centrum, making it the first vendor in Australia with a fully commercial ASP product.

"This is probably the most valuable franchise opportunity in the world today," Solution 6 CEO Chris Tyler enthused at the launch. "You don't need that trillion dollar franchise called Windows any more. Nobody owns this opportunity."

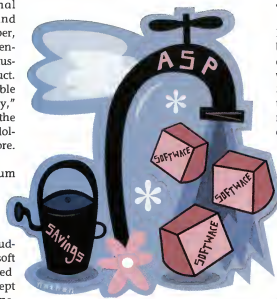
That may be true now, but Centrum isn't expected to enjoy solitary status in the market for long. The ASP Consortium, an industry group designed to promote the concept, has attracted numerous high-profile supporters including Cisco, Citrix, Compaq, IBM, Microsoft and Sun. IBM and Cisco have announced a partnership to help promote the concept of application hosting. At the same time, Hewlett-Packard signed a \$US2.2 billion ASP deal with Qwest in the US to provide online access to a range of software packages.

Microsoft is actively working to make its applications more hosting-friendly, although movement in that area isn't expected for a while. "In the short term, Back Office has much more appeal as an ASP offering than Office itself," Duston commented.

Oddly, Centrum won't initially offer access to Solution 6's own accounting applications; instead, it will provide a mixture of packages based around SAP's R/3 ERP package and Lotus' Domino groupware. However, Solution 6's own products are expected to be added in the near future, and the company is also exploring a partnership with Microsoft, although no deals have been signed.

The broad appeal of ASP is obvious. Mid-size companies, which don't have the

resources to maintain full-scale IT departments, can see obvious price advantages in paying someone else to provide applications on tap. Software companies are attracted to the idea of regular licensing revenue and interim upgrades, rather than the traditional peaks and valleys approach which results from major upgrade releases.



Although Solution 6 is targeting medium-size companies, other vendors argue that the ASP model can be applied at the very top end of the market. IBM and Hewlett-Packard both espoused the virtues of 'apps-on-tap' at a recent Gartner conference in Brisbane. Craig White, senior vice-president and general manager of the financing and complements group for enterprise computing at Hewlett-Packard, estimates that the worldwide ASP market is worth about \$US40 to \$US50 billion. He argued that the savings from applications rental are so great that even large companies should consider the concept. "Fortune 500 companies are not only looking at it, they're doing it right now," he said.

Colleen Arnold, managing director and chief executive of IBM Global Services Australia, was more cautious. She said there are still major pricing issues to

be resolved. IBM is currently trialling a number of different models in the US, renting applications from JD Edwards, Great Plains and SAP. "We haven't quite found the model [customers] have been looking for," she said. Nevertheless, Arnold remains confident that software will "all be Web-enabled three years out".

The price is uncertain

Price has proven to be one of the stumbling blocks for ASP plans. Centrum is adopting a fairly standard per user model with costs ranging between about \$20 and \$600 per user per month, depending on the applications provided. Other companies are considering alternative approaches, such as a flat per-application fee regardless of the number of users, or different charges depending on which parts of an application are used.

One issue which is still rarely considered in ASP rollouts is the overall maintenance of networks and hardware platforms. Centrum is providing access for its applications in partnership with Telstra's Big Pond Intranet service. The frame relay-based service provides more reliable access than conventional dialup, but it is expensive. At the launch, Ted Pretty, managing director of Telstra's convergent business next group, estimated that a typical cost for a group of 10 users would be about \$578 per month, although pricing varies widely depending on the access required. Initially, that network connection will only be available in capital cities.

Although some industry observers have suggested that the rise of ASP might see a resurgence in thin clients and network computers — a sentiment echoed by Chris Tyler in his comments at the beginning of this story — most current players don't envisage that there will be a shift away from the PC any time soon. Centrum's applications are initially being supported only on PCs and Macs. Duston said that Solution 6 is exploring deals with IBM and Sun for their thin client systems, but that would depend on user demand.

Angus Kidman and William Maher



Say 'ease'.

Sony's Digital Mavica stores pictures on a floppy disk. So it's faster, easier and cheaper to use than any other camera. No cables, no interfaces, no drivers. Simply pop the floppy into a PC and marvel at the SXGA 1.3 million Megapixel resolution*. Sony Digital Mavica even lets you capture up to 60 seconds of full-motion video and sound†. With 8x optical zoom*, built-in flash, auto focus and Stamina InfoLithium rechargeable battery, Mavica makes choosing a digital camera easy. For more information visit www.sony.com.au **It's a Sony.**



MVC-FD73



MVC-FD83



MVC-FD88



MVC-FD91

*Applies to MVC-FD88 model only. †Applies to all models except MVC-FD73

SONY.

How hard could it be to broadcast a wedding live over the Internet?

Wedding of a Net lifetime

Aah. Weddings. Everybody loves them. However, most weddings have one limitation: geographical location. It is rare these days to have a network of family and friends living in the one place, so not everyone always gets to attend the happy occasion.

When my husband's sister Karen announced she was marrying her fiancé Serge in Sydney, many of their loved ones around the globe knew they had no chance of being able to attend. There was family in Chile and friends in Brazil and the US.

Most devastated at not being able to attend was Nan, the bride's grandmother. A former music teacher, Nan taught Karen to play the piano and instilled a lifelong love of music in her grand-daughter. The 86-year-old lives in a nursing home in Queensland and is unable to travel. What could be done?

In true 1999 wedding style, the idea of broadcasting the wedding on the Internet was suggested.

All that we needed was a computer and monitor, a video camera, a video capture card, a free phone line in the church and reception, a stable Internet connection, several metres of phone cable, a Web site to broadcast the wedding to, the software to do it, someone to film it, an understanding priest and a whole lot of luck.

My husband John took it on as his pet project. Once the priest gave his approval, it was full steam ahead. About the only thing John didn't have was a video capture card, but \$120 later, a LifeView Fly-Video 98 card promptly entered the picture. And so the games began.

Both the church and reception had phone plugs, although they were located nowhere near where the camera had to be. Mental note: get more phone cable. John had heard about a great site, Camarades, which provides a free live Webcam feed from anywhere in the world. A total of 10 users can simultaneously log on to watch the action. But video would have to do — there was no audio capability. The site, <http://www.camarades.com/>, features a live index of Webcams around the world which anyone can view. Once the site was set up, an email with the URL of where the

wedding would be broadcast was sent to all interested parties.

To keep a permanent memento of the wedding, we placed a video tape in the camera. Everything the Net saw, we were able to watch on video tape the day after the wedding, including audio.

We had a few different ISP accounts, but decided to go with Primus Internet as it had demonstrated the best stability — that is, no unexplained dropouts — to date. Geoff, a keen amateur photographer mate of John's, agreed to film the event for \$100. A church rehearsal a few days before the wedding went relatively smoothly.

On the day of the wedding, Geoff got to the church in plenty of time to set up all the equipment. As the phone plug was in the church office in a building next door to the church, the phone cable had to snake out the church side door and over a pathway into the next building, before finally reaching the phone plug at the far end. Sixty metres of cable was required. We prayed — we couldn't have been in a bet-



some metres away in the bar area so cables were passed through the rafters in the ceiling to avoid any accidents. The 'world' got to see the cutting of the cake, speeches, dancing and a lot of people generally having a ball.

We prayed that the phone line was reliable and that the Internet connection would make it through the 45-minute service.

ter place — that the phone line was reliable and that the Internet connection would make it through the 45-minute service. It did.

It sounds unbelievable even now to say that everything worked. So many things could have gone wrong, but they didn't. The ceremony was broadcast in brilliant fashion.

At the reception, the computer, monitor, video camera and assorted cables were lugged in and set up behind the central dance floor. The phone plug, though, was

A few hours later, after the bride and groom departed, we sat around marveling at what had just been accomplished. We had broadcast a wedding over the Internet — a definitive sign of our times.

Somewhere on Queensland's Sunshine Coast, there was a happy grandmother watching the day unfold over a prehistoric but adequate PC in the back office of a nursing home.

Aren't you glad to be living at a time like this?

Roulla Yiacomou

And the winner is.....

DIAMOND VIEW 1995 19" Colour Monitor

"Overall, we found the screen image had sharper definition and more clarity than any of the other models, including the 21in models." - *Australian Personal Computer, April '99.*

"The Mitsubishi Diamond View is alot of monitor... boasts 18in of viewable area and brightly coloured, high resolution images" - *PC World, April '99.*



DIAMOND VIEW 1772e 17" Colour Monitor

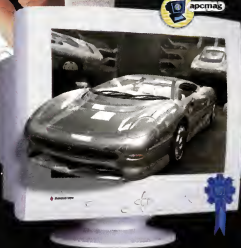
"... has outstanding picture quality and image controls combined with a three-year on-site warranty to make this monitor a very attractive proposition for the home or SOHO user... an edge for word processing, spreadsheets or gameplay. Highly recommended." - *Australian Personal Computer, April '99.*

DIAMOND VIEW 1570i 15" Colour Monitor

Voted No.1 PC Monitor by - *PC World, April '99.*

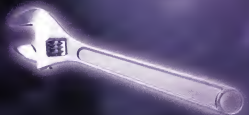
DIAMOND VIEW 2107 21" Colour Monitor

"Mitsubishi has done it again with the 21in Diamond View... We loved the controls... The picture was extremely crisp... Text was extremely easy to read, and the quality over a distance was great." - *Australian Personal Computer, April '99.*





**Every small business
is different.
So is every Prosignia.**



Never again pay for more technology than you need. Or settle for less. Because the all-new Prosignia range of small business desktops lets you configure the PC you need, at a price you can afford. Need more speed? Just ask. Need graphics or sound capability? Need five totally different configurations in the one order? Extended warranties, tailored support, bigger monitors? Just ask. Prosignia. It's just what you want, because it's just what you ask for.



PROSIGNIA

SOLUTIONS FOR SMALL BUSINESS

PROSIGNIA 320 DESKTOP

Intel® Celeron™ processor 466MHz

• 64MB, SDRAM • Diamond/nVIDIA Vanta Graphics with 16MB • 9.1GB¹ Ultra ATA Hard Drive (8.5ms/7200rpm)² • 52X TrueX CD-ROM Drive¹ • Creative SoundBlaster AudioPCI 128V SWT • Compaq PCI V90 Modem² • Microsoft Windows 98 Second Edition • Microsoft Office 2000 Small Business • Norton Anti-Virus Ver 5.0 • S500 15" Colour Monitor (13.8" viewable)

• 3 year limited warranty⁴

Upgrade to: • 128MB, SDRAM • S700 17" Colour Monitor (15.8" viewable) • Compaq Fast Ethernet Network Card

\$2195

OR \$20.31 PER WEEK*

PROSIGNIA 320 DESKTOP

Intel® Celeron™ processor 500MHz

• 64MB, SDRAM • Diamond/nVIDIA Vanta Graphics with 16MB • 9.1GB¹ Ultra ATA Hard Drive (8.5ms/7200rpm)² • 52X TrueX CD-ROM Drive¹ • Creative SoundBlaster AudioPCI 128V SWT • Compaq PCI V90 Modem² • Microsoft Windows 98 Second Edition • Microsoft Office 2000 Small Business • Norton Anti-Virus Ver 5.0 • S500 15" Colour Monitor (13.8" viewable)

• 3 year limited warranty⁴

Upgrade to: • 128MB, SDRAM • S700 17" Colour Monitor (15.8" viewable) • Compaq Fast Ethernet Network Card

\$2295

OR \$21.23 PER WEEK*

PROSIGNIA 330 DESKTOP

Intel® Pentium® III processor 550MHz

• 64MB, SDRAM • Diamond/nVIDIA Vanta Graphics with 16MB • 9.1GB¹ Ultra ATA Hard Drive (8.5ms/7200rpm)² • 52X TrueX CD-ROM Drive¹ • Creative SoundBlaster AudioPCI 128V SWT • Compaq Fast Ethernet Network Card • Microsoft Windows 98 Second Edition • Microsoft Office 2000 Small Business • Norton Anti-Virus Ver 5.0 • S700 17" Colour Monitor (15.8" viewable)

• 3 year limited warranty⁴

Upgrade to: • 128MB, SDRAM • P110 21" Colour Monitor (19.8" viewable) • Compaq PCI V90 Modem² • Internal Iomega 100MB Zip Drive

\$2995

OR \$27.46 PER WEEK*

Easy to own Easy to buy Your Compaq small business solution can offer tailored, flexible and expert service and support options, finance solutions through Compaq Financial Services or your credit provider, and shipment direct to your home or business. It also offers a choice of ways to buy: through the phone, web or selected resellers.

COMPAQ

Buy now on 1300 302 480

buy.compaq.com.au/apc1

or phone for your nearest Compaq reseller

Conditions Apply: Compaq is a registered trademark of Compaq Computer Corporation. All product and company names are for identification purposes only and may be trademarks and/or registered trademarks of their respective companies. Compaq asserts no rights over third party trademarks. Photographs are for illustrative purposes only and may vary from products depicted. All specifications are subject to change without notice. Information correct as at 1/1/98. Please contact Compaq or your Authorised Compaq Reseller on current pricing and further information. 1. CD-ROM transfer rates (eg 52X) are maximum theoretical speeds. Actual transfer rates may be less than that stated. 2. The Vanta V50 protocol is designed only to allow 56Kbps speeds from V50 compliant digital sources. Download speeds over ordinary telephone lines currently are usually less than 56Kbps, and vary with line conditions. 3. If through Compaq Financial Services consumer lease, or commercial rental agreement. Payments are monthly based on a 36 month term. Weekly amounts are approximations only. Conditions apply. Subject to credit approval. Third party arrangements permitted. 4. Compaq products are covered by 1-year-on-site (only for product located within 80kms of an Authorised Compaq Service Provider), 3-year parts and 1-year labour warranty. Prosignia Notebook 150 warranty service is carry-in. On-site does not apply. Third party products are subject to the manufacturer's warranty. 5. For Hard Drives, GB=8000 Bytes. 6. Hard drive specifications will vary depending on vendor. The Intel Inside @ logo and Pentium III are registered trademarks and Celeron is a trademark of Intel Corporation. DOB Direct COMP27017/APC2

AMD Athlon 700MHz

When AMD released its 600MHz Athlon processor earlier this year, it was the first time a manufacturer other than Intel had the fastest and most powerful x86 processor available. Despite the fact that Intel soon caught up in the megahertz race, the Athlon still had a performance edge over the Pentium III at the same clock speed.

AMD leapt ahead again, releasing the 700MHz Athlon well before Intel reached the 700MHz mark. Even though AMD's advantage lasted only a matter of weeks, it's extremely significant that AMD, not Intel, is pushing the performance limits.

Intel recently retaliated, launching its new Pentium III processor at speeds of up to 733MHz. Intel's new Pentium III

is built in a 0.18-micron process, contains 256K of level 2 cache integrated in the processor chip, and runs on a 133MHz

frontside bus. Intel has redesigned its cache system and claims up to a 20% performance increase over the older design of the Pentium III at the same clock speed. If this is true, Intel's 733MHz Pentium III may be more powerful than the 700MHz Athlon, but Athlon might still have the edge. In the next round, AMD is hoping to launch its 0.18-micron Athlon at 800MHz early next year.

Aside from the 700MHz processor, the specs of the test system AMD sent us were basically the same as the 600MHz machine APC reviewed in September (see APC September, page 29). It had 128M of memory, an 18G hard disk drive, a Diamond Viper V770 Ultra graphics card and a Creative Labs Sound Blaster Live soundcard.

These are fairly standard specifications for a high-end desktop system, and comparable to many of the high-end systems

we looked at in the annual PC feature (see page 88 of this issue). In most tests, the 700MHz Athlon system scored around 5% to 10% higher than the 600MHz Athlon we reviewed in September. This makes sense, because although the processor is 17% faster, the graphics and disk subsystems are the same, and performance is a combination of all these systems working together.

Compared with the high-end systems we looked at in the PC reviews (see page 114), the Athlon clearly deserves the title of the

fastest PC processor available today. Aside from the disk tests and the Half-Life timedemo, the Athlon scored higher than any of the PCs reviewed, by a significant margin in most tests. The 3D graphics, game and High-End Winstone tests showed that the Athlon's strengths clearly lie in multimedia; it achieved scores that blew away anything currently available.

Because AMD launched earlier, 700MHz Athlon systems are likely to be available—at least in the US—for the Christmas season, while the new Pentium IIIs probably won't make it into PCs until next year. Compaq and IBM launched 700MHz Athlon-based systems for the US market, though it's uncertain when these systems will be available in Australia.

Australian users still may have to wait a while before 700MHz Athlon systems are available here, though they may start appearing in small numbers by the time you read this. However, because of the premium AMD puts on its top-of-the-line processor, it might pay to opt for a 650MHz or 600MHz system, considering it

Product name AMD Athlon test system
Distributor AMD
Phone (02) 9959 1937
Online <http://www.amd.com/>
Price N/A
Warranty N/A

Specifications

Processor 700MHz AMD Athlon
L1 cache 128K
L2 cache 512K
RAM and type 128M SDRAM
Hard disk drive 18G Western Digital AC418000
Hard disk controller AMD Viper PCI Bus Master IDE Controller (V1.03RC)
Hard disk file system FAT32
Monitor N/A
Graphics card Diamond Viper V770 Ultra
Video bus type AGP
Video RAM 32M SDRAM
Video controller chip nVidia RIVA TNT2
Soundcard Creative Labs Sound Blaster Live
OS available Windows 98/NT

Benchmarks

Business Winstone 99	28.5
High-End Winstone 99	37.4
High-End Winstone 99: AVS/Express 3.4	6.2
High-End Winstone 99: FrontPage 98	2.2
High-End Winstone 99: MicroStation SE	3.7
High-End Winstone 99: Photoshop 4.0	5.4
High-End Winstone 99: Premiere 4.2	4.1
High-End Winstone 99: Sound Forge 4.0	3.3
High-End Winstone 99: Visual C++ 5.0	4.0
CPUMark 99	62.3
FPU WinMark	3,810
Business Disk WinMark 99 (K/sec)	4,920
High-End Disk WinMark 99 (K/sec)	15,150
Business Graphics WinMark 99	287
High-End Graphics WinMark 99	920
3DMark 99 Max	6,422
Viewperf Advanced Visualiser (fps)	17.98
Viewperf DesignReview (fps)	10.73
Half-Life timedemo at 800 by 600 (fps)	51.4
Quake 3 timedemo at 1,024 by 768, 32-bit colour (fps)	36.9

Note: The product used in these tests is a test system provided by the manufacturer and is not currently available for sale.

Winstone, WinBench and associated products are registered trademarks of the Ziff-Davis Publishing Company. These tests were performed without independent verification by Ziff-Davis Publishing Company.

will still beat anything Intel has on offer at the moment.

Josh Mehman



Your Gateway to a Computer you design yourself.



At Gateway, we'll build you a computer to suit your exact needs. And because we only start building your system when you order it, you can always be sure of the freshest technology delivered right to your doorstep in a friendly cow-spotted box! And because we sell direct to you, we can pass on the cost savings achieved by bypassing the middlemen. Check out the unbelievable value in the Gateway™ Performance 600 Super Power Desktop with Intel® Pentium® III processor. Call us now, to get your customised PC.

GATEWAY™ NEO™

\$1,399 Inc. Tax \$3.14/day*

- Intel® Celeron™ Processor 400MHz
- 64MB SDRAM
- 15" Monitor
- 4.3GB Ultra ATA Hard Drive
- 40X Max Variable CD-ROM
- Stereo Audio and Speakers
- 56K Internet/Fax Modem
- USB Keyboard and Mouse
- MS® Windows 98 SE
- MS® Works Suite 99

EASY INTERNET DESKTOP

GATEWAY™ ESSENTIAL 433C

\$1,799 Inc. Tax \$3.29/day*

- Intel® Celeron™ Processor 433MHz
- 64MB SDRAM
- EV500 15" Monitor
- 6.8GB Hard Drive
- 8 x DVD ROM Drive
- 3 Piece Stereo Speakers
- 56K Data/Fax/Voice Modem
- MS® Windows 98 SE
- MS® Works Suite 99

PERFECT FAMILY DESKTOP

TO BUY A GATEWAY™ COMPUTER

CALL 1800 500 734 CLICK

GATEWAY™ PERFORMANCE 500

\$2,799 Inc. Tax \$4.57/day*

- Intel® Pentium® III Processor 500MHz
- 128MB SDRAM
- EV700 17" Monitor
- 10GB Hard Drive
- 8 x DVD ROM Drive
- 3 Piece Stereo Speakers
- 56K Data/Fax/Voice Modem
- MS® Windows 98 SE
- MS® Works Suite 99

SUPER SPEED DESKTOP

GATEWAY™ SOLO™ 2150LS

\$2,799 Inc. Tax \$4.30/day*

- 12.1" Active Matrix Display (TFT)
- Intel® Celeron™ Processor 400MHz
- 32MB SDRAM
- ATI Mobility 2X AGP Video with 4MB
- 4.3GB Hard Drive
- Integrated Floppy & CD-ROM Drive
- Integrated 56k Data/Fax Modem
- Casual Carry Case
- MS® Windows 98 SE
- MS® Works Suite 99

PORTABLE VALUE SPECIAL

GATEWAY™ PERFORMANCE 600

\$3,499 Inc. Tax \$5.29/day*

- Intel® Pentium® III Processor 600MHz
- 128MB SDRAM
- VX700 17" Monitor
- 20.4GB Hard Drive
- 8 x DVD ROM Drive
- 3 Piece Stereo Speakers
- 56K Data/Fax/Voice Modem
- MS® Windows 98 SE
- MS® Works Suite 99
- DVD Adventure Suite

SUPER POWER DESKTOP

GATEWAY™ SOLO™ 9300LS

\$4,999 Inc. Tax \$7/day*

- 14.1" Active Matrix Display (TFT)
- Intel® Pentium® III Processor 450MHz
- 64MB SDRAM
- ATI RAGE Mobility P 2X AGP Video with 8MB
- 6GB Ultra ATA Hard Drive
- Integrated Floppy and 4x DVD Drive
- Integrated 56k Data/Fax Modem
- Casual Carry Case
- MS® Windows 98 SE
- MS® Works Suite 99

YOUR OFFICE ON THE GO !

All
our system
bundles deliver
great options and
value. We can also
design and build a
PC specifically to
your needs.



Gateway™

Connect with us.

www.gateway.com/au OR COME ON IN

- Sydney, 225 Clarence St, 02 9262 2898
- Melbourne, 398 Lonsdale St, 03 9670 3144
- Perth, 938 Hay St, 08 9321 0777
- Brisbane, 47-79 Elizabeth St, 07 3211 2000
- Selected Telstra Shops 131 800

Subject to change without notice or obligation. If purchased via credit card, your credit card will be pre-authorized for the full amount at the time of this order, but not finally charged until time of shipment. MCGNAN CAL5229APC

Dell Inspiron 7500 Pentium III

The Dell Inspiron 7500 notebook is the first notebook we've seen that uses Intel's Pentium III for mobiles — in this case, at 500MHz. The fastest APC has previously reviewed is a 400MHz Pentium II notebook. Being a Pentium III, the Inspiron now has access to the new SSE instructions provided by the architecture, although the usefulness of these instructions to the notebook user is questionable.

There's no way to skirt the issue that the Dell Inspiron 7500 notebook is huge. Sure, APC has seen some large notebooks in its time, but this one definitely stands out, especially as the recent trend is slimmer and lighter. It's not just physically large — nearly everything about it exceeds what was previously available in a portable.

The notebook APC tested was powered by 128M of RAM. The shipping model, however, will feature 256M of RAM as standard. Its 25G EIDE ATA-4 Ultra DMA hard disk drive is the highest capacity drive we've come across in a notebook. As expected, the drive returned some excellent results in both the Business and High-End Disk WinMark tests.

The notebook's footprint can be largely attributed to the 15in TFT active matrix display which overhangs the bottom half of the notebook. (The shipping version will feature a 15.4in display). It is capable of a crystal clear internal resolution of 1,400 by 1,050dpi; everything on the screen looks tiny at this resolution, but you get great screen real estate. At 1,024 by 768dpi, the display is fuzzy and impossible to view for any length of time. The notebook is capable of an external resolution of 1,600 by 1,500dpi.

On the front left-hand side of the notebook, there is a 6x DVD-ROM drive which doubles as a 24x CD-ROM drive and there is a floppy drive beneath it. On the right-hand side, you'll find a 'Megabay' — as Dell calls the bay that holds the battery. The Megabay can also accommo-

date an internal Zip drive (optional extra) or an additional hard disk drive.

At the back of the notebook are parallel, serial, PS/2, USB and infra-red ports, as well as TV out (via S-Video, making it next to useless for most people), external monitor and docking bay connectors. On the back left-hand side, there is a standard two Type II or one Type III PC card slot.

As with the Gateway Solo 9300 Pentium II 400MHz notebook we reviewed (see APC September, page 40), the Dell Inspiron 7500 uses ATI's Rage Mobility graphics adaptor with 8M of SGRAM. Indeed, the Inspiron put in its best performance on the graphics test front, pulling in a Business Graphics WinMark 99 of 125.3 and a very high 403 in the High-End Graphics WinMark 99 (compared to Gateway's 101 and 271 respectively).

It also aced everything else on the market in the other benchmarks — which you'd expect, given the new processor. It scored 23.3 in Winstone 99, well ahead of the 400MHz system's 16.5.

Its disk results were also far ahead; nearly 50% higher than the Gateway system.

Considering the amount of technology this notebook needs to power — not to mention the screen — the battery life of four hours and seven minutes was impressive. On the downside, a noticeable hum caused concern.

Given the size of the notebook, there is some serious weight to consider here. At a shoulder-sagging 4.3kg for the unit alone, the travel weight (which includes the power adaptor plus any optional extras)

Product
Distributor
Phone Number
Online
Price
Warranty

Dell Inspiron 7500
Dell
1300 303 107
<http://www.dell.com.au/>
\$8,149
1 year

Specifications

Processor	500MHz Intel Pentium III
Secondary cache (K)	512K
RAM and type	256M (tested at 128M)
Hard disk drive	25G
Hard disk controller	Standard Bus Mastering IDE Hard Disk Controller
Hard disk file system	FAT32
Video bus type	AGP
Video RAM	BM SDRAM
Video controller chip	ATI Rage Mobility P 2D/3D Accelerator
Pointer device	Glidedpad
Dimensions (cm)	6.4 by 32.8 by 26.7
(h by w by d)	4.3kg
Travel weight	Two Type II or one Type III
PC card slot type	6x DVD-ROM
CD-ROM drive/DVD	ESS Maestro 2E
Soundcard	None
Internal modem	15in
Display	1,400 by 1,050
Maximum internal resolution	1,600 by 1,500
Maximum external resolution	Lithium
Battery type	Windows 98/NT 4.0
OS available	CRT, I/O, keyboard/mouse, serial, parallel, 1 USB, mic-in, video-out, audio-out
Expansion slots	

Benchmarks

CPUMark 99	47.3
FPU WinMark	2,680.0
Business Disk WinMark 99	3,580.0
High-End Disk WinMark 99	12,100.0
Business Graphics WinMark 99	125.3
High-End Graphics WinMark 99	403.0
Business Winstone 99	23.3
BatteryMark: battery rundown time	4:07

Note: The product used in these tests is a shipping version available to the public at the time of publication unless otherwise stated. Winstone, WinBench and associated products are registered trademarks of the Ziff-Davis Publishing Company. These tests were performed without independent verification by Ziff-Davis and Ziff-Davis makes no representations as to the results. To test the battery we had APM enabled on all notebooks. All power-saving features were disabled.

would probably inch closer to the 5kg mark.

Finally, the price of this notebook will probably also be one of the highest you've seen: \$8,149. Dell says the notebook is aimed at the SOHO market and for people who travel 'point to point' but not necessarily constantly. Whether such a person would fork out this kind of money for a high-end notebook is another question altogether.

Roulla Yiaccoumi



PERFECT PICTURE IN,
PERFECT PICTURE OUT.



Connect an EPSON GT-7000 flatbed scanner with an EPSON STYLUS COLOR 740 inkjet printer and watch your images come to life. With the speedy EPSON STYLUS COLOR 740 you'll see 1440 x 720 dpi colour images, noticeably richer and true to life. And black text that's laser sharp. The GT-7000USB scanner recognises over 68 billion colours. 600 x 1200dpi optical resolution means accurate colour reproductions, and as with the printer, a USB interface supports both Windows® and Macintosh™ environments. It's the affordable total colour solution for the home or small office, with the re-assurance of EPSON quality.

EPSON®
THE POWER TO CREATE



Sydney (02) 9903 9000 Melbourne (03) 9685 6565 Brisbane (07) 3360 0219
Adelaide (08) 8338 4660 Perth (08) 9480 0418. Or visit www.epson.com.au

EPS 0369 The HALE Agency

Compaq MP1600

We're normally skeptical of the portability of any projector unit we receive, because for most projector manufacturers, 'portability' means affixing a handle to one side of a large box equivalent in size and weight to a cinder block.

Compaq's first foray into the projector market, the MP1600 is the antithesis of other projectors. In fact, it is the first truly portable projector that APC has seen. This snappy little unit weighs in at only 1.9kg. It has a very small footprint — 20.9cm high, 22.84cm long and 7.6cm at its widest point — so it will take up minimal room in a suitcase. The MP1600 comes bundled with a snap-on



carry handle and a small carry bag, and is excellent for the first time user.

The Compaq MP1600's user interface consists of a highly navigable onscreen display (OSD). There are three buttons: one for menus and actions, and the other two for cycling up and down through the options. These are located on the side of the projector that allow you to navigate the OSD. The focus ring that allows you to adjust the sharpness is just above the lens. It is the simplest and most user-friendly projector APC has used; we had the unit up and running in no time.

Unfortunately, the inputs on the MP1600 are few and far between, limited to standard VGA and a DFI input. An optional video adaptor that plugs into this second port allows you to display

images from handhelds, VCRs and DVD players. As it is, you can project an image size from 65.3 to 653cm (two to 20 feet), although APC wouldn't recommend using the projector at the longer distance required to gain the picture size.

Although the lamp is rated at only 600 lumens, the picture is bright and crisp. Compaq claims this is due to the digital light projection (DLP) technology it uses. Unlike LCD projectors, the micro-mirrors within a DLP reflect more of the original image's light — up to 90% compared to LCD's 70%. The gaps between LCD cells are more marked than the micro-mirrors, which can affect the sharpness of an image.

Darren Ellis

Distributor	Compaq
Phone	1300 368 369
Online	http://www.compaq.com.au/
Price	\$8,995
In short	An excellent unit, especially for the road warrior.

Diamond Rio 500

MP3 buffs have been waiting some time now for Diamond to replace its Rio PMP300 digital music device, which was released late last year. Thankfully, it seems to have been worth the wait. The new Rio 500 features some major improvements over its predecessor, including a USB connection and extra memory.

USB is a must-have for portable MP3 players. Without it, music files have to be transferred from the PC via a parallel cable, which is a very slow process. With the new USB cable, APC was able to transfer an entire 58M album to the Rio in slightly more than two minutes.

Another improvement is the 64M of onboard memory, which is double the capacity of several competing devices. This is enough to store more than an hour of CD-quality music, and can be increased (at extra cost) with an additional 16M or 32M memory card. Still, you will have to use lower quality MP3 files if you want to fit much more than a standard album.

The Rio is also one of the first MP3 players to include copyright security. The new player supports the MetaTrust security system, which will help artists to track music

downloads on the Web. However, the scheme isn't in widespread use yet, and Diamond is planning to release a free upgrade for the Rio when it becomes available. Of course, it's debatable whether this feature will earn or cost Diamond sales.

Transferring music from CD-ROM or the Internet is a breeze with the Rio 500. Diamond has upgraded all its audio software, and now features links to free music at RioPort.com. It's also very easy to create MP3 files from your favourite CDs.

Like all MP3 devices, the only drawback when copying music is sound quality. During testing there was an annoying squealing noise in several MP3 tracks, even at the recommended sampling rate of 128Kbps. This usually affects certain styles of music, although it can also vary with different recording software.



Nevertheless, Diamond has done a lot to improve playback on the Rio. The new design includes a bookmark function for long audio tracks, as well as a handy scrolling button to browse quickly through songs. The style-conscious will be relieved to know that the plastic shell comes in purple, grey or blue.

Unfortunately, the Rio 500 does not include voice recording or an FM radio receiver, which are found in competing devices like the Creative Nomad. Those people wanting a digital recorder or small radio will have to look elsewhere.

William Maher

Distributor	Chips & Bits Australia
Phone	(03) 9696 1911
Online	http://www.chips.com.au/
Price	\$599
In short	Great player if you can afford it.

Apple Cinema Display

Along with its groovy-looking PowerPC G3 and G4 systems, Apple has released a range of LCD screens in transparent colours that can take pride of place in any workspace. Adding to the range, Apple has released a 22in monster screen for multimedia applications.

Apple abandoned the usual monitor aspect ratio, using the HDTV standard (16:9) instead, and a maximum resolution of 1,600 by 1,024dpi. Apple claims the Cinema Display allows designers to view two pages side by side with space left over for toolbars and palettes. The aspect ratio means you can also view DVD movies in wide-screen format without having the black letterbox spaces at the top and bottom. APC found Apple's claims to be true, depending on the font and size you choose. Some sans serif fonts were read-

able down to 8 point size, while most Roman fonts needed to be 10 point or larger to be legible at 100% magnification.

Despite its width, the Cinema Display is quite economical on desktop space because it's a little less than 30cm deep. Changing the angle that the screen rests at also allows you to minimise glare from overhead

lights. The screen's anti-glare coating already does a good job in this respect, and APC found the screen easy to view in a variety of lighting conditions. The two front legs also leave enough space for you to store the mouse and keyboard when you're not using the PC. The display has two powered USB ports at the back.



At this stage Apple is only packaging the Cinema Display with new PowerMac G4 systems, and even then you'll be spending more on the display than on the G4 system

itself — Apple's ultimate G4 systems go for \$7,295 (still \$1,300 less than the display).

The Cinema Display also uses the new 24-pin digital visual interface (DVI) connector. Standard display adaptors take digital information from your PC and convert it to an analog signal that conventional monitors can display. LCD screens then need to convert the analog signal back to digital information in order to display it. The DVI interface eliminates these unnecessary steps and just sends digital data directly to the display.

However, several new graphics cards (such as the Leadtek WinFast GeForce 256 APC reviewed on page 40) now ship with DVI connectors, and Apple theoretically could bundle the display with a display card and sell it to owners of PowerMac G3s or even (heaven forbid) non-Apple PCs.

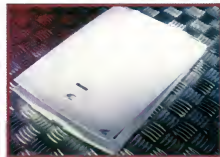
Josh Mehlman

Distributor	Apple
Phone	133 622
Online	http://www.apple.com.au/
Price	\$8,595
In short	Big.

CanoScan FB630U

Canon's new CanoScan FB630U is sleek, small and lightweight — quite possibly the thinnest scanner APC has seen. If you're in the market for a portable scanner, this is a good option. The fact that it is powered through the USB port is a definite advantage, because it does away with the need for a power adaptor. It weighs in at 1.5kg and the top face is only marginally larger than a sheet of A4 paper, which makes it a great attachment for a notebook user.

Boosting a surprisingly high — particularly for the price and size — 600 by 1,200dpi optical resolution (which can be interpolated to 9,600dpi), the CanoScan uses a CIS mechanism. In theory, this results in sharp images with no distortion because the actual scanning elements are just millimetres from the image itself. CIS mechanisms are smaller and less complex than the traditional CCD mechanisms, which also makes them cheaper to produce, but they still have a way to go before they can equal CCD in quality.



One other unique feature of the FB630U is the blue Start button on the front panel. This is the shortcut for operating the fax, email and copy options via the toolbox.

User-friendly image editing and text conversion software is included for both Windows and Macintosh. The imaging software was a bit tricky to understand at first, but is easy enough to grasp with some experimentation. You have the ability to perform a range of different distortions, effects and cropping styles. A photo

album-style thumbnail view of images is available to browse through the collection and the toolbars are well located onscreen and easy to understand.

Scanning images at 300dpi was a breeze. The same photographs scanned at 600dpi proved to be a bit time consuming, as was scanning at 1,200dpi. Colour matching was acceptable and minor details were clear. Shadows, flesh tones and colour variation didn't prove to be a major problem either — only the occasional problem of the slightly 'over-exposed' look.

Considering its size and price, the CanoScan is a nifty little bundle. A worthy candidate for home use, but still no match for a professional product.

Laura Kane

Distributor	Canon
Phone	(02) 9805 2000
Online	http://www.canon.com.au/
Price	\$249
In short	Great for the home office.

3Com

More connected.

Michael Anderson
Regional Sales Manager



7.00p.m. - still in the office. Better call the restaurant to hold my table.



I'm scheduling business trips for this quarter, and a quick holiday - I need it!



Note to myself on mortgage & investments.



Buy flowers for PA's birthday, schedule Auckland meeting.



Synchronise it all between my Palm V™ connected organiser and my PC with one touch.



Simply Palm

www.palm.com.au

Palm Computing, Inc., developer of the world's leading handheld platform.
© 1999 3Com Corporation. 3Com, Palm Computing, and HotSync are registered trademarks and Palm, Palm V, PalmPilot, the Palm Computing platform logo, Simply Palm and More connected. are trademarks of Palm Computing, Inc. or 3Com Corporation.

Leadtek WinFast GeForce 256

Formerly known as the NV10, nVidia's GeForce 256 processor has been touted as something of a revolution for desktop PC graphics. It's the first consumer-level graphics chip to include a hardware transform and lighting (T&L) engine, designed to take a load off the host processor, and apply it to a custom circuit. For details on how T&L works, take a look at this month's Technobabble column (see page 150).

The first card based on the GeForce chip to cross APC's desk was Leadtek's offering, the WinFast GeForce 256. The WinFast is a 32M card based on SDRAM. Some cards will be delivered with RDRAM and should perform a little faster. It has a

VGA out, digital flat-panel interface as well as an S-Video output — but no composite.

The GeForce chip has some impressive specifications. There's the hardware T&L engine, of course, which can theoretically transform 10 million triangles per second and apply eight lights to each vertex. The card also has a theoretical fill rate of around 480 million pixels per second — a significant jump on the TNT2's 250 million pixels. The exact rates depend on the clock speed at which the card manufacturer sells the card: the Leadtek drivers actually have a slider for manually changing the clock speed of the processor and memory, but APC stuck with the default values for testing purposes. The Leadtek package also comes with DVD software, which

worked well when it worked. It was, however, hideously buggy.

It's an AGP-only card, and can operate in both AGP 2x and 4x modes.

Benchmark results

APC installed DirectX 7 and the latest drivers from nVidia on a 450MHz Dell Dimension and ran a large set of tests, including a new benchmark called TreeMark. For comparison, we also installed a Gigabyte TNT2 card in the same system and ran the same set of benchmarks.

Because the GeForce is meant to perform well on slower machines, the Dell was underclocked to 300MHz by switching the bus speed back to 66MHz (which also slows the memory access speed), and we ran the benchmarks again.

The results were mixed to say the least. In some applications — especially those

Dell Dimension XP5 at 450MHz

Leadtek WinFast GeForce 256

Benchmark

Ziff-Davis WinBench 3D	977.0
Futuremark 3DMark	3,685.0
Viewperf: Advanced Visualizer (fps)	59.1
Viewperf: DesignReview (fps)	16.5
Viewperf: Data Explorer (fps)	15.9
Viewperf: Lightscape (fps)	2.1
Viewperf: ProCDRS (fps)	7.8
Quake 3 at 640 by 480, 16-bit colour (fps)	62.0
Quake 3 at 1,024 by 768, 32-bit colour (fps)	55.7
Quake 3 at 1,600 by 1,200, 32-bit colour (fps)	35.3
Half-Life, 800 by 600 (fps)	35.3
TreeMark: simple (fps)	42.8
TreeMark: complex (fps)	12.2

Benchmark

Ziff-Davis WinBench 3D	977.0
Futuremark 3DMark	3,685.0
Viewperf: Advanced Visualizer (fps)	59.1
Viewperf: DesignReview (fps)	16.5
Viewperf: Data Explorer (fps)	15.9
Viewperf: Lightscape (fps)	2.1
Viewperf: ProCDRS (fps)	7.8
Quake 3 at 640 by 480, 16-bit colour (fps)	62.0
Quake 3 at 1,024 by 768, 32-bit colour (fps)	55.7
Quake 3 at 1,600 by 1,200, 32-bit colour (fps)	35.3
Half-Life, 800 by 600 (fps)	35.3
TreeMark: simple (fps)	42.8
TreeMark: complex (fps)	12.2

Dell Dimension XP5 at 300MHz

Leadtek WinFast GeForce 256

Benchmark

Ziff-Davis WinBench 3D	783.0
Futuremark 3DMark	2,732.0
Viewperf: Advanced Visualizer (fps)	43.3
Viewperf: DesignReview (fps)	15.5
Viewperf: Data Explorer (fps)	20.5
Viewperf: Lightscape (fps)	2.0
Viewperf: ProCDRS (fps)	6.4
Quake 3 at 640 by 480, 16-bit colour (fps)	46.2
Quake 3 at 1,024 by 768, 32-bit colour (fps)	46.1
Quake 3 at 1,600 by 1,200, 32-bit colour (fps)	6.9
Half-Life, 800 by 600 (fps)	24.0
TreeMark: simple (fps)	42.6
TreeMark: complex (fps)	12.2

Benchmark

Ziff-Davis WinBench 3D	783.0
Futuremark 3DMark	2,732.0
Viewperf: Advanced Visualizer (fps)	43.3
Viewperf: DesignReview (fps)	15.5
Viewperf: Data Explorer (fps)	20.5
Viewperf: Lightscape (fps)	2.0
Viewperf: ProCDRS (fps)	6.4
Quake 3 at 640 by 480, 16-bit colour (fps)	46.2
Quake 3 at 1,024 by 768, 32-bit colour (fps)	46.1
Quake 3 at 1,600 by 1,200, 32-bit colour (fps)	6.9
Half-Life, 800 by 600 (fps)	24.0
TreeMark: simple (fps)	42.6
TreeMark: complex (fps)	12.2

Gigabyte GA-660 TNT2

Result

884.0
3,792.0
10.1
6.6
10.1
1.2
10.0
49.1
46.1
22.9
30.5
7.0
1.7

Gigabyte GA-660 TNT2

Result

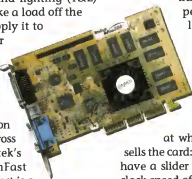
735.0
2,735.0
6.8
4.7
7.4
0.8
7.4
35.7
31.4
14.5
21.7
4.8
1.1

Test system specifications: Dell Dimension XP5-450, a 450MHz Pentium III with 128M SDRAM, 10.1G IBM-DDTA-371010 drive, FAT32 file system, Toshiba DVD-ROM SD-M1202, Turtle Beach Montego A3D running Windows 98. Tested using a Leadtek WinFast GeForce 256 or a Gigabyte GA-660 TNT2.

During the tests at 300MHz, the processor was underclocked to 300MHz. For both the GeForce and the TNT, version 3.53 of nVidia's detonator drivers were used.

3D Winbench and TreeMark were run at 1,024 by 768 in 16-bit colour. Viewperf was run at 1,280 by 1,024 in 16-bit colour. 3DMark was run at 800 by 600 in 16-bit colour.

All products used in these tests are shipping versions available to the public at the time of publication, unless otherwise stated. WinStone, WinBench and associated programs are registered trademarks of Ziff-Davis Inc. These tests were performed without independent verification by Ziff-Davis, and Ziff-Davis makes no representations as to the results.



Y2K's coming. Don't just sit there.



It'll be the end of the world if you lose your data.



And that could come with the new millennium, or computer crashes, or accidental deletion, or even a virus. In short, if you haven't backed up your computer data, you could lose it. But there is a solution. With Iomega's range of portable storage media and bundled software solutions, getting help is as easy as 1-2-3.

- 1. Back Up** Before anything else, use Iomega's disks, drives, and software to make copies of everything on your PC.
- 2. Update** Use Iomega's bundled software to diagnose potential problems and either fix or update your PC.
- 3. Protect** Now that you're on your way, Iomega software automatically protects your files well into the next millennium.

So save yourself and relax.

Iomega's innovative software solutions make protecting your data even easier and more convenient: QuikSync automatically backs up your files whenever you save data on your hard disk; Norton™ Zip® Rescue recovers your data when your hard disk crashes and Password Protection prevents unauthorised access to your data.



Jaz® 2GB
The superfast, extremely vast professional storage.



Zip® 100MB or 250MB
The SuperFloppy Preferred by Millions.™



Click!™ 40MB
Mobile storage solution for digital cameras & mobile PCs.

Your life is safe here.™ **iomega.**

For more information on the complete safety solutions for your data, call 1800 624 929 or visit our web site at www.iomega.com

Copyright © 1999 Iomega Corporation. All rights reserved. Iomega, Zip, Jaz, Click!, Iomega Y2K Logo are trademarks of Iomega Corporation. All other products and brand names are the property of their respective owners.

that make use of the T&L features of the card — the GeForce simply blasted the TNT2 out of the water. In a few others, it actually ran slightly slower, despite the higher fill rate of the card.

Futuremark's 3DMark test produced some interesting results. The TNT2 actually scored a little better in this benchmark, despite the superior specifications of the GeForce. 3DMark does not use hardware T&L. 3DWinMark's results, however, were more in line with what we expected from the card. The WinFast equalled our previous best score of 977 from the Matrox G400 (tested on the same machine, but running DirectX 6.1).

The Quake 3 Timedemo results are also telling (we used demo2, part of the 1.08 download, for testing purposes). Quake 3 uses OpenGL for geometry, enabling it to take advantage of many of the GeForce's features. The Leadtek card generally scored 10 to 13fps faster than the TNT2 at all resolutions (except for the one unusual result at 1,600 by 1,200, when running on the 300MHz system).

There was less differential in the Half-Life tests, with the WinFast getting about 3 to 5fps better than the TNT2. There were also serious problems with the visual quality of the GeForce in Half-Life, with a number of textures missing. We await the patch.

APC also ran the Workstation benchmark Viewperf (see 'How we tested' in the PC reviews on page 108 for an explanation of this benchmark) on the WinFast. With its heavy reliance on geometry rather than rendering, this card was expected to do well. It screamed. On Advanced visualiser it ran *six times* faster than the TNT2 using CPU-based geometry. On three of the other tests, it scored between 50% and 100% faster than the TNT2. Interestingly, though, it ran a little slower on ProCDRS.

TreeMark was a benchmark released by nVidia in order to show off how well the GeForce performs — and it does. The benchmark simply draws a tree, with dynamic lights floating around it and pans the camera around the model. An incredibly complex model, drawing the tree is a geometry-heavy task. There are two modes to the benchmark: simple and complex. The latter has more dynamic lights and much more detail in the model.

The interesting results from this benchmark are not the huge difference between the GeForce and the TNT, which was expected given the purpose of the benchmark, but the lack of difference between the results at different processor speeds. When the CPU speed was dropped, the GeForce did not lose any speed.

The wash-up

Simply put, the image quality delivered by the WinFast was absolutely superb. There were no flaws that we could detect and in 32-bit colour, images looked fantastic. It was very much on par with the excellent image quality of the TNT2.

Existing games concentrate on low polygon counts and high-fill rates, because that is what existing options can provide. When T&L accelerators become more pervasive, however, we should see games with vastly increased polygon counts and consequently much improved environments and models. For now though, the GeForce is a slight step up on the fastest accelerators currently on the market, and is likely to be blown out of the water on existing games when 3dfx unleashes the Voodoo4 — a card with a massive fill rate but no T&L.

Nathan Taylor

Distributor
Phone
Online
Price
In short

Beyond Computers
(02) 9648 0777
<http://www.beyondcomputers.com.au/>
\$399

A fast card, but waiting for software to catch up.

WIN



with SONY

Sony is giving you the chance to win one of 5 Sony Big Picture Prizes every time you purchase Sony Floppy disks between now and February 2000. 5 lucky consumers will win a Sony FD Trinitron Wega TV and Sony Hi Fi 6 head Stereo VCR, so get your entries in now!

To enter, just send a promotional label from any box of Sony Floppy Disks.

Call 1800 226 429 for your nearest Sony reseller or for more information visit our website www.sony.com.au

SONY



Last entry closes last mail 10/2/00. Draw Dates: 1st Draw 12/11/99; 2nd draw 3/12/00; 3rd draw 17/12/99; 4th draw 21/1/00; 5th draw 11/2/00. A.C.N. 001 215 354. NSW TC98/7822, VIC 98/2282 issued on 30/8/99. ACT TP99/0590, NT99/0296, S.A. T99/2774.

There's no such thing as a free mobile

Things are about to look very different when it comes to buying mobile packages. *dingo blue*, the company that brought you rock bottom rates on long distance and Internet services is now starting a revolution in mobile telephony!

dingo blue gives you the power to create your own GSM mobile package and the freedom to roam when and where you want to.

How would you like a mobile service that has **NO fixed term contract?** Or how about a mobile plan with **low rates** — no peak, off peak — just low rates.

For 35c per minute you can call anywhere in Australia — 24 hours a day 7 days a week! And if you use our long distance service, you'll only pay 30c per minute (by the way, we strive to offer the lowest international rates in the market - check out our price guarantee at www.dingoblue.com.au).

No fixed contract, no connection or joining fees, no monthly access fee, no minimum spend and no exit fees. Just pay for the calls you make.

To see what the best deal for you is, try the mobile comparison calculator at our web store www.dingoblue.com.au. If your present plan is still the best, then stick with it - but if it's not, join us at:

www.dingoblue.com.au
1300 555 502

- NO fixed term contract
- NO connection or joining fees
- NO monthly access fee
- NO minimum spend
- One LOW RATE per minute, 24 hours a day

LOW FLAT RATES

Only 35c per minute anywhere, anytime in Australia

Only 30c per minute anywhere, anytime in Australia when taken with *dingo blue* long distance



**dingo
blue**

Wild about
phones & the net.

Xircom PortStation

With the recent proliferation of USB devices, it's quickly becoming apparent that two USB ports just aren't enough. You have USB input devices, including mice and keyboards, USB scanners, printers, digital cameras, MP3 players, speakers and so on. USB hubs that can take a single port and turn it into many have been around for a while, but Xircom's recent entry into this field adds a new twist.

The PortStation is essentially a modular hub that connects to the PC via USB. It offers standard USB hub features — four ports and a daisy chain port — in its standard configuration, but also offers other port options. The basic package that APC looked at, the Connection Starter Kit, contained two PS/2 ports and a parallel port, making it ideal for newer systems or notebook systems lacking these ports.

One of the key selling points for the PortStation is that it's completely modular, allowing users to snap in ports as needed.

Each module has a parallel port-like connector on either side that snaps onto the PortStation, providing its own set of ports to the kit. There are a variety of module options to choose from: USB, PS/2, Parallel, plus a seven-port USB module, a serial port module, a 10Mbps Ethernet module or a 56K modem module. Xircom also has plans to release modules with four Ethernet ports, DSL and Cable modems, ISDN terminal adapters as well as home phone networking modules. Xircom hasn't published a limit on the number of ports you can add to a single PortStation.

However, there are a couple of key ports missing — a USB audio module and gameport module would not have gone astray. Still, the PortStation does offer most other forms of connectivity.

Setting up is simply a matter of plugging it into your PC's USB port. The Port-



Station can draw power from the USB port, but the connection kit also provided an external power plug — presumably when you add a lot of modules the power supplied by the USB port is not enough.

All up, a very clever idea and well implemented. A must for anybody with too many devices for a standard PC to handle.

Nathan Taylor

Distributor	Xircom
Phone	(02) 8923 7000
Online	http://www.xircom.com.au/
Price	Connection Starter Kit: \$245
In short	A novel idea. Well designed and well implemented.

Epson Stylus Color 860

Say what you like about inkjet running costs (they are coming down slowly), the quality and speed stakes are still being raised every six months. Currently, the market seems to be settling into two camps: very cheap yet relatively slow units catering for home and SOHO markets, and more expensive yet markedly faster offerings catering for business users.

The latest business inkjet from Epson, the Stylus Color 860, incorporates all the usual photorealistic text and paper handling specifications, but claims an output speed of up to 9ppm on both text and colour. That's pretty reasonable even for a mono desktop laser — for colour, it's outstanding.

In APC's tests, a multi-font text page on plain paper came out in just under nine seconds — that's a tad less than 8ppm actual speed. It should be noted, however,

that the print spooling speed is noticeably slower than alternatives such as Hewlett-Packard. Nonetheless, this is still excellent output speed with very crisp text, even if there is a little more bleed-through to the other side than other competitive offerings.

Colour output was impressively fast. A full colour photorealistic A4 image popped out in a shade under four minutes and 50 seconds, and a mixed graphics and text page only took two minutes and 50 seconds — about half the expected average speed. Apart from speed, another of Epson's big claims is the printer's smaller ink droplet size. It claims that ink drops down to four picolitres from the 144 nozzles, allowing much more efficient use of ink reserves, and improved print speed.



The 860's design has moved away from Epson's boxy look, and has a smoother, lower profile with a fashionably transparent lid. On the back are both parallel and USB ports, although no data cables are supplied in the box.

The printer comes with separate CMY and black ink cartridges, a sample pack of paper and a driver/instruction manual CD. Setting up is very straightforward, both in parallel and USB modes. The operation is surprisingly quiet given the speed at which the bidirectional print head has to squirt across the paper. Colour output is the usual Epson — the cream of the crop on treated paper and reasonable on plain paper, although with slightly less colour depth than some of the competition.

Jeremy Torr

Distributor	Epson Australia
Phone	02 9903 9000
Online	http://www.epson.com/
Price	\$699
In short	Neat, quiet, fast. Excellent quality on all media. If you run an office, this one should be on the list.



Need a brand you can believe in?

Being the pioneers in data storage, Verbatim are the world leaders. So it's no surprise that Verbatim has an extensive range of CD media for any CD recording application, with features and benefits unique only to the Verbatim brand. Verbatim CD's have a special proprietary dye that is more resistant than any other to UV light, and they also have the longest archival life – up to 125 years. In effect, you could say they last forever. Unbelievable.

Details of our extensive range and nearest stockist available at –
www.verbatim.com.au



Verbatim®

Optical and Magnetic Media • Hardware • Computer Accessories

Engineered on a human level.

Protector. Defender. Sentinel.

All cleverly disguised as the new HP Vectra.

Hosting a consortium of security features that guard your vulnerable data.

State your purpose: A Smart Card Reader verifies users.

Credentials, please: Dual-level passwording controls access to your data.

A thousand apologies, but no: Remote locking components defend against unauthorized confidential data removal.

Moral: When you want protection, hire the best.

www.hp.com/pc-au



HEWLETT®
PACKARD

HP Vectra Corporate PCs: Intel® Celeron™ processor 400 MHz up to Pentium® III processor 550 MHz/
Microsoft® Windows NT® Workstation 4.0/ 64 MB RAM/ Up to 13.5 GB HD/ Up to Matrox® MGA-G200 AGP graphics/
HP Top Tools management software

Intel, the Intel Inside Logo and Pentium are registered trademarks and Celeron is a trademark of Intel Corporation.
©1999 Hewlett-Packard Company. All rights reserved.



Sound Blaster Live Platinum

Creative's new sound card, the SoundBlaster Live Platinum, offers a huge variety of sound formats including AC-3 for DVD-surround watching, 32-bit audio processing and a dynamic range of 192 decibels. It has a commendable range of speaker configurations and configurable audio theatres as well as the ability to use 32M of host RAM for voice mapping.

Output quality is excellent, aided by the wide range of output options such as standard analog, SPDIF, optical digital and CD digital. This versatility extends to inputs too, and is further enhanced by the inclusion of what Creative has dubbed the Live Drive. This is a standard 5.25in drive bay unit which fits into the front of the PC, and duplicates and extends the back panel connectivity. It offers RCA SPDIF in and out, headphones with volume control, line/mic with volume and impedance matching and MIDI in and out.

The inside of the Live Drive is also choic-a-block, with connections to the PCI soundcard itself, a power splitter input, a connection to a dedicated optical output

card, and a standard CD digital mini-DIN connector (which is also supplied on its own backplate). When you add in the usual CD, DVD, auxillary and modem connections internally on the card itself, plus digital out, line in, microphone in, MIDI, rear speakers and front speakers on the backplate as well, it is obvious the designers haven't skimped on connectivity. There's even a bundled microphone adaptor jack and microphone.

Bundled software includes an equally generous range of games and apps.

Installation, despite the maze of cabling required, was straightforward and relatively quick. The system can be tailored to whatever speaker and room setup you have, and can be programmed with a series of preset configurations.

Once everything was up and running, however, two niggles emerged. First was the MediaRing netphone applet. This insisted on popping up and demanding to

be registered every boot. Second, in some instances it froze the mouse too.

Despite this, it is an excellent card. It's highly flexible and the front panel connector is a real boon for those that want to connect the hi-fi or a guitar without dislocating their wrist behind the back panel. Definitely worth considering if you want a better

quality soundcard, or you just want to improve your current connectivity options.

Jeremy Torr



Distributor

Phone

Online

Price

In short

Creative Pacific

(02) 9906 8887

<http://www.creative.com/>

\$599 (\$299 without the Live Drive)

Outstanding connectivity, clever integrated software controls and an innovative drive bay input solution.

R U Sure

Online shopping allows you to compare prices far more quickly and easily than conventional retailing. To make this even easier, there's an increasing proliferation of Web sites offering automatic comparison shopping. R U Sure is such a site, but has taken the concept a step further by providing a software agent which automatically compares prices as you shop and warns you if you're about to pay more for a product than you have to. APC tested a beta version of the R U Sure Shopping Agent.

Once installed, R U Sure resides quietly in your System Tray until you visit a site registered with the program, then it automatically pops up (you can switch this feature off). Once you've selected an individual product, the agent polls other



registered sites (it offers a fairly comprehensive selection) and finds the cheapest price for the product you want. Clicking on that price takes you to the site's entry point for that product. You can also do product searches directly from the agent. The program cohabited with Internet Explorer more happily than with Netscape, but worked acceptably with both browsers.

Although it's easy to operate and it polls a large variety of sites, there's a single major flaw with R U Sure, which

renders the product largely useless for Australian users: the agent can't accurately calculate postage charges. For instance, on one search the agent calculated the postage on a single CD at \$US20 — almost four times the actual price quoted by the site. This is despite the fact that you have

to provide a shipping address to help with postage calculations.

R U Sure is also unable to cope with the reality of online shopping for people outside the US, which is that you can often only save significantly by purchasing several items from a single retailer to offset shipping charges. Buying individual items (such as CDs) that are one or two dollars cheaper ultimately proves to be false economy, because the postage outweighs any benefits. While this would be less of a problem with purely digital goods such as software, these goods create relatively little e-commerce traffic. Overall, R U Sure is a neat idea, but it's of limited use for online shoppers outside the US.

Angus Kidman

Distributor

Online

Price

In short

R U Sure

<http://www.rusure.com/>

Free

A neat concept but a less-than-impressive reality.



We welcome comments and suggestions. Send correspondence to APC Readers' Say, PO Box 37, Sydney 1028, or email APC@acp.com.au. All correspondence becomes the property of APC and is subject to editing.

Java recommendation

Congratulations on your consistently excellent magazine. You are to be commended on covering Linux long before it became fashionable — few other magazines have had the guts to publish such in-depth articles on the social and political aspects of computing.

Just a small point about your Java IDEs roundup in the October issue: you failed to mention NetBeans Developer (<http://www.netbeans.com/>), a superb product written in pure Java, which works on Unix and Mac as well as Windows. I believe it gives JBuilder a run for its money.

Brian Blackwell
Internet

Sick of spam

I remember looking in my inbox several months ago. All my mail was legitimate and was from people I know. Now, when I look through my inbox I see four messages from people I know and three with subjects like 'Make \$30,000 in only three months' and 'Cut your telephone bill in half!' I don't remember asking to be sent advice on how to cut my telephone bills. I didn't ask for any of this.

This is happening on a regular basis and there's nothing I can do to stop it. I try to unsubscribe from these mailing lists but only half of these emails with 'UNSUBSCRIBE' as the subject ever make it to their destination. Many of these mailing list servers seem to have a one-way mail server; the stuff goes out but never comes in.

So, I pose the question: Who the hell is actually responding to these ads? I figure that if no-one responded to them, they'd give up. But no, every day there's more and more emails. There are people out there to blame and I need someone to blame. Recently, just to prove myself correct, I opened a new email account at Yahoo. I requested my address to be unlisted and gave it out to no-one. After a week of no spam I thought I'd do a little test — I listed my email address to receive a newsletter from a well-respected company, and the next day I had 17

emails in my inbox from people and companies I'd never even heard of. I have come to the conclusion that spam is a plague — it's an absolute pain in the neck to get rid of. If only there was a cure that didn't require the installation of more software...

People should start writing angry letters and protesting and sending the emails back where they came from (God forbid a flood of emails would crash a mail server). Maybe then these spam distributors will get the point and leave those of us who want to use the Net — free of such nuisances — alone. BTW, keep up the great work on the magazine.

David Angelovich
Internet

A catch? Maybe not

Adrian Sutton, in 'Always a catch' (see 'Readers' Say', APC October 1999, page 48) is misinformed about telephone service charges and the ISP situation in the US. First, standard telephone service in the US does not have timed local calls from residences — we pay a flat rate for the line, and this includes unlimited time. Local calls are

timed only from pay phones, hotel phones and for limited-use plans (lower cost to low-income consumers). This is why telephone companies are now imposing an additional surcharge on multiple residential lines — they claim that Internet users are getting a free ride by making a local call to access long-distance communication. Moreover, they spend hours online.

However, those with only one residential line pay only that flat rate per month and have unlimited local call time. In the area where I live (central Texas), a number of local ISPs are alive and growing. (My husband and I use different ISPs so that if one goes down temporarily, we aren't cut off.) These typically have a basic (low-hours) and unlimited, flat-rate plan (usual cost is about \$US20 per month, though it can be lower if you sign up for a year at a time.) In my experience, novice Internet users may sign up for a 'free' ISP, but [make the] transition to a full-service, flat-rate, unlimited-hours ISP once they get their feet wet. Incidentally, I'm enjoying your magazine on a Qantas flight from Sydney to Perth.

Elizabeth Moon
Internet

Corrections and amplifications

In our recent ISP reviews (see APC November, page 80), we reported that One.Net's 2.1c access plan incurs a \$19.95 setup fee. The 2.1c plan does not in fact have a setup fee.

Our recent hard drive reviews (see APC October) stated the cost of the Maxtor DiamondMax 6800 (see page 112) as \$220, when the price (including tax) was in fact \$268.50.

APC apologises for any confusion these errors may have caused readers.

Finally, because the images of Apple's iBook (page 29) and Iomega's Zip 250 USB (page 40) in our November issue were inadvertently printed in monochrome instead of colour, we thought we'd show you what they really look like.



Apple's iBook



Iomega's Zip 250 USB

New but learning

As a new user of both computers and the Net I am finding APC a great read. Although a lot of the technical stuff is over my head, I manage to glean what I need to help me in my attempt to master this computing craze. In reference to your ISP survey (see APC November, page 124), I found it most informative and helpful. I signed up just over a month ago with Internet Primus.

I was looking for local call connection; unlimited access for \$30 per month; billing by mail rather than credit card; and seven-day, 24-hour free support. Primus was able to deliver on all of these. The support staff have been excellent. I was able to connect over the phone; the guy who talked me through the setup was great (no technobabble, just simple step-by-step instructions). After a week of being connected I was having a problem with dropouts, which frustrated me a little, so I called up Primus support and explained my problem. Once again I found the support staff willing and able to help. After a few minutes they had diagnosed the problem as an unstable connection and talked me through fixing it. It sounded a bit techy for me but I figured this guy knew what he was talking about so I gave it a go. Guess what? My problem is fixed. As for pricing; I took the unlimited 2 option, which costs me \$25 per month.

I would like to see a little more generosity in the data limit of 200M per month and the 20-minute idle time. However, when I compare Primus with others you surveyed, it is pretty good value for a home user such as myself.

Ray Hicks
Internet

More on modem 'upgrade'

I laughed when I read the modem upgrade article (see 'Service & Reliability', APC November, page 54), as the exact same thing happened to me, but with an IBM Aptiva modem. I purchased the machine in early 1998 after being informed that, yes, the modem was upgradable to 56K when the official v90 specs were released.

This was to be flash upgradable, I was told. After the v90 specs were made official, I rang IBM only to be told that technicians were working on the upgrade. Six months later, they were still developing the drivers but would send them to me as soon as they were ready. Two months later, I was told they were done and they would post them

to me. Three weeks later, I was told that they must have got lost in the mail, but I shouldn't have been given them anyway, as the modems were upgradable by sending in the old modem and paying \$170 for the 'upgrade'.

After weeks of fighting, they agreed to give me a new 56K modem, free of charge. This was duly delivered and installed — but only ran at 31,200bps max. Ah, 'must be your ISP', I was told. 'Its modems aren't compatible'. Unfortunately for him I work at my ISP, and the boss was standing next to me so I put him on to explain how the modem (a Winmodem) was at fault — not his equipment.

A few weeks of 'we don't know why' and the call was elevated to somebody who knew more than what the tech support manual stated as standard responses. Oh yes, he said, the modem needs a flash update. The disk was received a few days later, and the modem worked.

I then purchased a Gateway... vowing never to touch an IBM again.

Keiron Throssell
Internet

Apply bandwidth pressure

I enjoyed reading your article on broadband access (see APC November, page 133), but you seem to have missed the main problem with the USO (universal service obligation).

The Australian Government has set the USO for data transmissions at 64Kbps by 2001. If government (and IT advisers) had any vision, they would realise that this is only slightly better than the current standard. They should have set a higher standard as the technology to achieve these higher standards is already available. They should have set a gradual increase in the minimum standard over a period of five to six years. I suggest that by the end of 2001 the USO for data transmissions should be a minimum of 128Kbps for downloads. By the end of 2002 the minimum upload speed should be 128Kbps and by the end of 2005 the telecommunications industry should be told that the download and upload speed minimum should be 1Gbps. This would also force the upgrading of the 'last mile' by Telstra.

Only when these conditions have been met could Australia be seen as a smart country leading the Information/Knowledge Age into the 21st century.

Steve Olive
Internet

THREADS

from APC's Web sites

In October, it was revealed that Microsoft was pushing to have funding for the US Department of Justice cut. Given the ongoing antitrust case being pursued by the DOJ, this could hardly be characterised as an unbiased action on the part of the software giant. Visitors to our discussion boards certainly weren't impressed, although many viewed it as inevitable: It would be stupid to think that any business would not do everything in its power to maintain its market advantage, so why would Microsoft be any different?

Much discussion centred on whether Microsoft's behaviour showed it up as a company whose future was limited. Steven Marton noted:

Microsoft is the pre-Jack giant... It's only a matter of time. It'd be OK if the giant was courteous and it watched out for the little guy so he didn't step on him. But as is the case with most of these behemoth corporations, they are a law unto themselves — to their own detriment.

Others were more succinct. One anonymous poster, who we assume is a Linux user, noted: Microsoft is a dinosaur. Ignore it and it will go away.

That raised the ire of one contributor: An extremely ignorant point of view. Sure, dinosaurs died out, but you seem to forget that dinosaurs ruled for millions of years.

The dinosaur debate didn't end there: Microsoft has ruled millions of years in IT time. If you don't understand this, just think of how fast the Industry moves.

Want to put across your view, or see what other readers have to say? Join the discussion at <http://apcmag.com/interactive/> or <http://newswire.com.au/sboard/>.



New BJC-7100 has even more refined PhotoRealism, 25 tonal levels and the plain paper advantage.

And that's only part of the story.

Because the BJC™-7100 also features water-fast printing, even on postcard type stock, is significantly faster than its predecessor in B&W and up to three times faster for photo quality colour.

But, like all Canon high definition Professional Resolution printers, the story begins with quality.

7-colour process. The BJC-7100 has a seven-colour printing process using both conventional CMYK inks, and lower density CMY inks, plus a new image processing system. The result is not self-styled "photo-printing," but a unique Canon PhotoRealism™ process.

More sophisticated colour in 25 tonal levels. The inks can be mixed and layered to produce up to 25 tonal levels with up to 90 times the colour combinations of traditional CMYK inks. The result is finer colour gradations, richer dark tones and hard to produce light shades are virtually free of pixelisation. So high quality paper produces images that are almost indistinguishable from photographic prints.

**Professional Resolution
Ultra-High Definition.**



Better plain paper performance. Then there is P-POP (Plain Paper Optimised Printing), a process unique to the new BJC-7100. It bonds an invisible Ink Optimiser to the paper before inks are applied. The inks, in turn, bond to the optimiser. Plain paper text and lines are better defined, colours are more vibrant, tones are sharper, and print-outs become virtually water fast.



Better paper handling, full bleed A4. Better plain paper use can obviously lower operating costs. It accepts virtually all paper types from plain to high gloss photo paper, has the ability to print full-bleed A4 and even accepts cardstocks at paper-weights up to 550 gsm (0.8MM).

Canon Customer Care. All Canon printers feature a one-year warranty, upgradeable to three years for minimal cost, and are backed by Customer Care hot-line support. Drivers are available for Windows® 3.1x/95/98.

If you need high definition PhotoRealism, even on plain paper, you need the P-POP advantage. To learn more about the new BJC-7100, call us on 1 800 021 167.



New BJC-7100 - \$599^{RRP}

Canon



Innovation is dragging to a standstill
in the world of PCs.

By Jeremy Horey

Colour my world

"The industry sold big ugly beige boxes that took up loads of desk space. The customers were saying 'my God, I don't know how to connect all these cables', 'my God, this thing is too noisy', 'my God, it doesn't fit on my desk' and 'my God, I have to hide it when visitors come over'. iMac was the first time that a computer company had really addressed some of these issues, these challenges."

There are no prizes for guessing that this quote came from Steve Jobs, speaking at the European launch of the new G4 Macintosh in Paris.

The iMac has revitalised Apple, but surprisingly, the success of the iMac has not left all Apple dealers happy. The brightly coloured machines come in lots of five — one of each colour — and some dealers have been left holding a lot of orange machines.

This is one of the reasons why other computer companies have not rushed to release ranges of brightly coloured PCs. When beige is the only colour on offer, you don't get left with computers that you can't sell, and you don't have to keep so much inventory because one colour fits all.

This is understandable in a business where margins are under constant pressure and competition is intense. Innovation costs money and is risky. It's better to follow what everyone else is doing and stay safe. Leave the great design and funky colours to Apple.

Apple customers are not the same as those who buy PCs. Even so, there is a lot of demand among PC buyers for something that looks more stylish and that is easier to set up. The problem for PC makers is whether or not their customers would choose style and ease of use if all other factors were equal. Will following the iMac model give them a competitive advantage in the market? Is there time to find out if design and colour will make a difference in a market where manufacturers bring out

new products every nine months? Apparently the answer is no. A couple of small companies have gone down the iMac path, but have not been wildly successful.

The PC market is not innovative. Even in areas such as the design and colour of the boxes, no-one is prepared to do something a little different. The PC today looks much the same as it did five or even 10 years ago.

It may have a faster processor, bigger hard drive and a lot more memory, but all the changes inside the box are based on standards or on technological initiatives

It is only going to be marginally faster than a Pentium in displaying Web pages. The latency of the Web itself is a far more significant factor in the user experience than the speed of the processor.

On top of this, for the first time there is a very low-cost operating system that has some excellent software that isn't owned by Microsoft. Linux could provide a very good basis for a low-cost PC. It can provide all the software and Internet access that most users would need. If the machine was packaged with its own

The PC market is not innovative. Even in areas such as the design and colour of the boxes, no-one is prepared to do something a little different.

from Intel and Microsoft. The manufacturers do very little. The variations that used to exist in BIOS, motherboard and other areas have all but disappeared.

There is one area where we have seen a lot of innovation from PC makers: the distribution of PCs. First, Dell and Gateway started selling directly to the public through mail order. Then Dell went online. Other companies have gone one better, giving away PCs for free if the customer takes the advertising as well.

In this environment it is no surprise that we have not seen companies move to ultra-cheap PCs. The situation is ripe for very low-cost machines, but the established PC makers have too much to lose.

For the first time in 10 years a low-cost PC would have a chance to win a large share of the market. There are several reasons. First of all the focus for many new users is the Internet. To use the Internet, particularly in its current form, you don't need a leading-edge machine. A Pentium

modem and printer, setup and drivers would not be an issue.

Hard disks and graphics cards are cheaper than ever. The cost of memory has risen, but a low-cost PC doesn't need more than 32M and this is quite cheap.

An innovative PC maker could put together a package that would deliver everything that would be needed for less than \$600. Such a price point and a solid distribution system, combined with an advertising campaign, could bring PCs into a lot more homes. In fact, I would estimate that a large slice of those who already own a PC would be very happy to shell out \$600 to get another one.

Unfortunately, I don't think that we are going to get such a machine. PC makers are in too much of a rut to see the opportunities.

Jeremy Horey is a senior consultant with Tech Talk Australia, a division of Com Tech Online. You can contact him at jeremyh@techtalk.com.au.



1440 DPI, Drop Modulation Technology and Individual Ink Tanks.

If you demand speed, quality and economy from your printer, look no further than the new Canon BJC™-6000.

New see-through ink tanks. What really distinguishes the BJC-6000 is the new ink tank system. For better operating economy there are individual see-through ink tanks for all colours. Each is separate from the print heads, significantly reducing operating costs and allowing you to replace only the empty tank.

The think tank system. Each ink tank has a prism moulded into the bottom. A beam of light measures ink status, and a monitor in the printer driver keeps users up to date on the amount of ink remaining in each cartridge.

More life-like colour. An all-new driver emphasises colours as they are perceived by the human eye. The result is natural colours with more subtle variations in dark shaded regions, and better gradations in high-lighted areas. PhotoRealism with a six-colour ink system and Drop Modulation further enhance quality, even on plain paper.

1440 X 720 dpi. Drop Modulation Technology™ generates droplets around one-third the size of conventional

droplets giving you high resolution printing at 1440 X 720 dpi. The result is a sharper image with smoother tonal gradations.

Sharper Black Text. Drop Modulation Technology is now available for the first time with a black cartridge to help eliminate grain in text. At the same time newly developed black ink gives sharper, clearer text with improved water resistance.

New, high-performance engine. An innovative new engine design provides the fastest print speeds, in both black & white and colour, of any Canon Bubble Jet printer.

Canon Customer Care. All Canon printers feature a one-year warranty, upgradeable to three years for minimal cost, and are backed by Customer Care hot-line support. Drivers are available for Windows® 95/98/NT and an optional USB conversion kit is available with drivers for Windows 98, iMac and Mac G3.

If you are looking for performance and economy, you've found it in the new BJC-6000. For more information please call us on 1 800 021 167.



New BJC-6000 - \$549^{RRP}

Canon

Price shown is the recommended retail price including tax. Canon and the Canon logo are registered trademarks and BJC, Bubble Jet and PhotoRealism logos and marks are trademarks of Canon Inc. Windows is a trademark of Microsoft Corp. in the U.S. and other countries. All other product, brand and company names are trademarks of their respective owners. Canon Australia Pty Ltd ACN 005 002 951 CS/8259



Now might be the time to ditch stocks in Internet startups in favour of inkjet printer companies.

By Helen Dancer

From PostScript to PDF

The past couple of years have seen Adobe Systems make the concerted transition as a company from a traditional print publishing mindset to a write anytime, read anywhere paradigm that shows impressive acuity.

At Seybold's March publishing conference in Boston, Adobe unveiled its InDesign software, long heralded under the codename K2 as the new generation publishing software and the answer to the complexities of the multiple media publishing environment.

The atmosphere was like a revival meeting of the Apple faithful. When you remember that the most passionate among the Adobe community are Mac users and that each of the companies have long praised the strengths of the other as perfect partners, it all makes sense.

Adobe's most recent foray is into products that protect the copyright of written material in the digital world. This move is both logical and complex, and very well conceived. WebBuy encrypts a work that will live out in cyberspace, and takes the potential 'customer' for that work back to the author. PDF Merchant unlocks the document once payment has been arranged and permission has been granted.

The strategy for the WebBuy/PDF Merchant family is similar to that used for the now pervasive Adobe Acrobat. The Acrobat Reader is freely available for download, and allows anyone, anywhere to access a document stored in PDF format. Adobe Acrobat is the revenue component for Adobe.

However, in both of these product offerings there's a subtle shift in emphasis from the traditional publishing model. Instead of creating a published work, printing it and delivering it, the work is now created and delivered without printing.

Adobe's CEO, Charles Geschke, notes that the role of printer is shifting from provider to user, and in the process there's a transfer of printing costs from publisher to reader. 'One button-click from PostScript to PDF' changes the equation significantly. Electronic delivery saves paper and eliminates the packaging and delivery cost burden of the information provider. The consumer is paying for the value of the information, not the costs associated with getting it to the consumer's door.

We're still wedded to the printed page . . . but that doesn't make it ideal as a delivery medium.

This begs the question of what happens to it when it arrives on the virtual doorstep.

Reading onscreen is a notoriously inefficient way to absorb information. Forrester Research's John McCarthy notes that sending someone important information via email is not necessarily the best way to convey the message; the reader's retention rate is particularly low because most people skim when they read onscreen. They're looking for the bottom line, not the detail. McCarthy maintains that paper is much more reader-friendly than a 70dpi screen.

The increase in the incidence of electronic delivery of documents has fortuitously coincided with the availability of ever cheaper, easier to use and more function-rich printers for home, small business and the enterprise. Printing on demand is the new corporate watchword. Companies deliver memos and briefing papers electronically for recipients to print out when they need them, rather than printing at the point of dispatch and filling filing cabinets on a 'just in case' basis.

The shift, taking place so seamlessly and pervasively, is enough to make a share trader wonder if now might not be the time to ditch those Internet stocks and invest in a sure thing: printer companies.

That's fine if we're all going to be printing out as much information as we currently receive on paper once the switch to electronic delivery is complete, but I doubt that's true. I agree wholeheartedly that this shift from printing at the point of dispatch to printing at the point of

consumption is significant, but the thought of a printing press (OK, OK, a smart small colour inkjet printer, working overtime) in every home is just not a viable alternative. Nor does it make sense in terms of how we actually consume information.

Access to the Web means that I can start my day with the latest copy of the *Wall Street Journal* without having to wait, and I can skim heaps of stories every day, without the urge to print out a single page.

The shift in the publishing paradigm that Geschke outlines is really about paring down the volume of information we get to the bits we want, rather than the bits other people think we need, or should read.

We're still wedded to the printed page as a consumption medium, but that doesn't make it ideal as a delivery medium. Storing stuff on silicon rather than on paper makes so much more sense.

Helen Dancer is the editor of the *Bulletin's* e-bulletin section. You can contact her at hdancer@acp.com.au.

1440 dpi
up to A3.
ESS • STOP PRESS • STOP PRESS • STOP PRESS • STOP PRESS

1440 DPI, PhotoRealism, richer blacks, exceptional speed, plus independent cartridges.

The idea of a dual cartridge system has existed for awhile. But needless to say, some systems are better than others. The new BJC™-5000 proves this point.

1440 dpi with variable ink drop sizes. Both the standard colour and optional PhotoRealism™ cartridges use Canon's Drop Modulation Technology™ with variable drop sizes in resolution up to 1440 dpi. The combination delivers smoother colour gradations and far less "grain" on virtually all paper types.

New dual-cartridge system enhances performance.

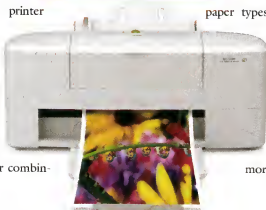
Then, a special dual cartridge system lets both cartridges act independently to complement each other. In "split-page mode" identical black or colour cartridges can effectively double print speeds. Or, using different ink types you can produce exceptional quality effects, with the printer automatically identifying and using each cartridge for the desired result.

90 times more colour combinations. For instance, PhotoRealism inks can be used with conventional inks for a seven-colour ink system, with multiple ink densities per pixel for up to 90 times the colour combin-

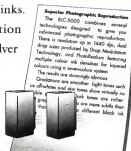
ations of conventional CMYK inks. Combined with Drop Modulation Technology the result approaches silver halide quality reproduction.

An all-new approach to black. It uses new, black ink that is blacker than conventional ink. As a result, black & white documents have an exceptionally high degree of finish. Two of these cartridges (BC-23) are included in the box, and may be used simultaneously.

**Professional Resolution
Ultra-High Definition.**



New BJC-5000 – \$399^{RRP} including 3 cartridges.



**Independent print
heads can
halve print time.**

Print up to A3. Both standard and PhotoRealism inks may be used on all A4 paper types. It will also print up to A3, and supports banner printing to the equivalent length of 6 A4 pages.

Canon Customer Care. All Canon printers feature a one-year warranty, upgradeable to three years for minimal cost, and are backed by unlimited hot-line support. To learn more call us on 1 800 021 167.

Canon



It's possible to carry out all kinds of transactions online — but is it any easier?

By Cathie Kennedy

Infiltration or transformation?

The Internet, some will have you believe, has transformed our personal lives and revolutionised the way we do business. In a few cases this is probably true. For example, in the July issue of APC I wrote of the extraordinary success of Federal Express' electronic commerce strategy. In just one day the company has one million customers online, moves around 3.5 million packages, and conducts around 63 million electronic transactions. This would not have been possible without the Internet. There are probably dozens of similar success transformation stories.

For every success story, however, there are thousands of uninspiring examples of business on the Internet. I recently booked accommodation online through a well-known chain of hotels. It took a little more than 13 minutes from the time I logged on until finally hitting the submit button. I received an email confirmation almost immediately.

In the comments box I requested a baby crib and a non-smoking room. My confirmation email ended with the message, "Your comments have been forwarded to the hotel, who will discuss your requirements upon check-in." At a pinch, I could risk not being assigned a non-smoking room, but I needed to know beforehand if the venue could supply a crib.

As it happens, a few days later I needed to alter the dates of my reservation. Returning to the Web site I was unable to find a facility to do this, and decided to call the hotel directly. It took just five minutes to call directory assistance for the phone number, contact the hotel and finalise the booking. In addition, I asked about my special requirements, and the reservations clerk was able to confirm that both requests would be filled.

The phone was a faster, more responsive and more productive medium, and I've found this to be the case with similar services. After one attempt at paying my mobile phone bill over the Internet, I resorted to paying by telephone. Also, because my bank is situated opposite my office, I find it much easier to walk across the road and carry out transactions physically rather than navigate my way through the cumbersome ebanking site.

The words revolutionised and transformed suggest some kind of metamorphosis, which I believe is a little too charitable for the current iteration of many Web sites. Sometimes I suspect we use the Web because we can, not because it's more productive or more efficient. I'd argue that the Internet has *infiltrated* rather than *transformed* our lives. That's not to say it won't happen eventually, but organisations need to find ways to add value through their Web sites that would not otherwise be possible.

Those who simply take their earth product and make it virtual are short-changing themselves and their customers, and are certainly not making the most of their investment. Retail is a classic example. Check out any number of clothes outlets online and you'll find nothing more than an electronic catalogue.

Think a little creatively, however, and organisations can add functionality that will begin to revolutionise their business and transform the life of their customers. How would you like to visit an online shop that allows you to add your profile with your size, height and colouring? You may have a scanned photograph of yourself in your personal database. You could select clothes and drag and drop them onto the model of yourself. There may even be an online colour-coding system that helps you select the shades that best suit your

complexion, and like a real shopping experience, you could email the clothed model to your friend for a second opinion.

If a site had that level of functionality, could deliver the goods to my door within 24 hours, and offered an unconditional seven-day money-back guarantee, I would shop online. However, an electronic catalogue won't motivate me.

There is one area where I think the word revolutionised can be applied to the Internet, and that's communications. Many organisations are using the Internet to communicate in ways that otherwise would not be possible. The Australian Computer Society, for example, has been trialling the delivery of virtual professional development events live over the Internet to service its members in remote parts of Australia. Remote viewers need a relatively modest PC running Windows 95 or 98, and a free downloadable copy of RealPlayer. A PowerPoint presentation is available on the Web site prior to the event. At the end of the session, participants can participate in a live Q&A session.

When you look at this and similar examples which use the Internet as a communications vehicle, you can see that we've come a long way since the 13th century technique developed by the early pioneer of fast transmission, Genghis Khan. Khan would have horses positioned every 20 miles, and when messengers wore out one horse they'd jump on the next. They rode two hundred miles a day.

I'll agree that the Internet has revolutionised communication, but it has not quite reached the stage where we can claim it has transformed businesses and our personal lives.

Cathie Kennedy is a former editor of APC. She can be contacted at ckennedy@ozemail.com.au.

Australia's most popular printer for home and small offices combines exceptional value, with outstanding performance.

Use 75% less ink. Super Economy mode reduces ink consumption by 75% compared to Standard mode, and works for both black and white and colour. Combined with an optional high capacity, black ink cartridge, it can print up to 2400 pages in black and white, and up to 400 in colour using standard inks*. That's anywhere from two to five times the output of any direct competitor!

Photo quality printing. There are three colour print modes - Normal, Fine and Photo. Photo mode emphasises highlights and contrasts, and improves half-tones by producing richer blacks. Or, using the optional black ink cartridge, you can convert the BJC™-265SP to a fast B&W printer.



Brilliant colour, super economy, optional PhotoRealism, better Internet printing,

all for just \$149.

Optional PhotoRealism™ To this Canon adds the option of PhotoRealism inks, for photographic reproduction approaching silver halide quality. It produces up to four times the colour combinations of conventional CMY printers, for smoother colour gradations and more accurate colours in skin tones and other light shades.

Better Internet images. Image Optimisation takes low resolution Internet images (typically 72 dpi), and prints them at the highest resolution supported by the printer to reduce jagged edges and pixelisation.

Canon Customer Care. All Canon printers feature a one-year warranty, upgradeable to three years for minimal cost, and are backed by Customer Care hot-line support.

Drivers are available for Windows*

3.1x/95/98 and Windows NT.

The BJC-265SP offers exceptional operating economy plus high quality colour printing, for just \$149. For more information call 1 800 021 167.



BJC-265SP colour Bubble Jet™ printer – \$149^{RRP}

Canon

* Based on 5% page coverage for B&W and 7.5% coverage for colour, Super Economy not available with PhotoRealism inks. Price shown is the recommended retail price including tax. Canon and the Canon logo are registered trademarks and BJC, Bubble Jet and PhotoRealism are trademarks of Canon Inc. Windows is a trademark of Microsoft Corp. in the U.S. and other countries. Canon Australia Pty Ltd, ACN 005 002 951. CS8409

Can you get a better deal buying a PC online?

Getting connected

Companies such as Dell and Gateway specialise in direct marketing and have been selling PCs over the Net for nearly as long as the Net has been a commercial phenomenon. Dell, for instance, currently claims sales of more than \$US30 million a day through its Web site. However, the top-tier PC manufacturers have been a little more reluctant to embrace online sales. This is not because they don't think there's money to be made, but because by selling online they risk offending their reseller community and thereby sacrificing revenues.

The problem is particularly pronounced in Australia, where a limited population means that losing a large percentage of reseller sales could seriously damage a vendor's bottom line. This year, however, a fair degree of that nervousness has dissipated. Both Compaq and Hewlett-Packard have launched online stores aimed at the Australian marketplace, although each has emphasised that they are not abandoning the reseller channel.

To complement APC's annual December PC review (see page 88), Price Watch decided to see just how easy — and how

cheap — it is to purchase a PC online. For the purposes of this exercise, we decided to examine the direct sales offerings from six major manufacturers: Apple, Compaq, Dell, Gateway, Hewlett-Packard and IBM. (There are clearly many other ways to purchase equipment online, including resellers which offer online sales and electronic auctions, but we didn't include these for reasons of space.)

We sought prices for the cheapest basic PC. Our only requirements were that the PC was an entry-level model; that it was suitable for home use; and that it included a bundled monitor. We didn't specify any requirement for modems, extra software or multimedia equipment, but we removed any included network cards before calculating the price.

While there's some significant variation in the prices, every company managed to come up with an entry-level system for about \$2,000. The price variations were largely due to differences in specification, such as reduced memory capacity, processor speed or drive space. However, most sites allow for these components to be upgraded.

About Price Watch

Each month, Price Watch examines variations in retail pricing and service. Investigations are conducted anonymously, either by telephone contact with retailers or through pricing details supplied on their Web sites. Prices and specifications provided here are as quoted by retailers; while we assume these are correct, we cannot accept responsibility for errors or omissions. The responsibility rests with sales staff to provide adequate information, as their employer would expect them to do with every customer. Readers are advised to always obtain a written quotation prior to making any major technology purchase.

Clearly, buying online is not the best way to get an ultra-cheap PC; check the small ads in the back pages of any newspaper and you'll find systems much cheaper than this. However, if you want the reassurance of purchasing from a brand-name vendor, then going online may well get you a better deal than buying through a retail chain.

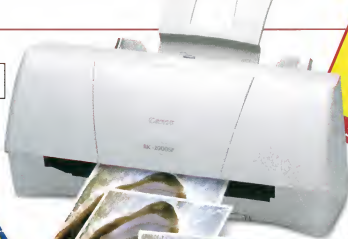
While pricing options don't vary widely, the quality of the interface does. The 'all-in-one' nature of Apple's iMac led to a simple, step-by-step buying process — the biggest challenge was selecting the case colour. In contrast, Dell's well-developed site allows virtually every option on the machine to be changed, and prices are automatically recalculated when you are doing this. Both approaches seem appropriate for the target market (beginner users for Apple, PC enthusiasts for Dell).

By the time you read this, the prices and options on offer are likely to have changed. PC technology evolves so fast that there's little point in doing price research unless you are seriously committed to buying at that time. If you do want quick, easy ordering and a reasonable price, buying on the Net is definitely an appealing option. ■

Buying a PC online

Company	Contact	Price	Processor	Memory	Drive	Monitor
Apple	http://www.apple.com.au/store/	\$1,995 (iMac)	G3 350MHz	64M	6G	15in
Compaq	http://buy.compaq.com.au/	\$2,080 (Prosignia Desktop 320)	Celeron 466MHz	64M	9.16G	15in
Dell	http://www.ap.dell.com/au/	\$1,654 (Dimension L)	Celeron 433MHz	32M	4.3G	15in
Gateway	http://www.gw2k.com.au/	\$1,599 (Essential 400C)	Celeron 400MHz	64M	6.8G	15in
Hewlett-Packard	http://www.buy.hp.com.au/	\$1,899 (Pavilion Home PC 4415)	K6/2 400MHz	64M	6.4G	15in
IBM	http://www.ibm.com/shop/au/	\$2,086 (Aptiva 25A)	K6/2 450MHz	64M	6G	15in

Super Economy in
colour and B&W



PhotoRealism and Drop
Modulation Technology



\$199
Value, Value, Value.
STOP PRESS • STOP PRESS • STO



Super fast blacks

Whether you judge it on features, performance or price, the new BJC-2000SP is amazing value for money.

The new BJC™ 2000SP proves that beauty can be more than skin deep.

Because it was also designed to deliver high-speed blacks, superb photographic printing, superior operating economy and even offers optional scan/copy/fax functions – all for an incredibly low price. And that's just for starters!

Introducing Automatic Image Improvement.

Canon has developed a way to automatically improve less than perfect digital images, without needing colour balancing and re-touching. It's called Photo Optimiser. This new, selectable driver function automatically adjusts for defects in exposure, highlights and shadows, without affecting the original file in the computer.

Brilliant colour. To further improve images, Drop Modulation Technology™ with dual drop sizes for smoother colour gradations works on all paper types. Then, for the gold standard in photographic reproduction, Canon's PhotoRealism inks¹ vary the saturation per pixel so that a single dot could have

0%, 33%, 67% or 100% of a colour. This produces up to five times as many colour combinations as conventional CMYK inks, with better half-tones and almost no visible grain, even in areas of low colour density.

Better operating economy. Super Economy mode reduces ink consumption by up to 75%, and works in both black and white and colour. It can print up to 3600 pages in black text, and up to 400 in colour.² And because the standard inks are optimised for low-cost plain paper, you can keep the cost of your everyday printing needs to a minimum.

It's even a scanner. The optional IS-22 scan head allows you to turn your printer into a colour scanner in seconds. It scans colour images up to 360 dpi and documents for fax, OCR and copying functions with the appropriate software.

Canon Customer Care. Canon Australia supports the BJC-2000SP with a one-year warranty, upgradeable to three years for minimal cost, and is backed by Customer Care hot-line support. For more information call us on 1 800 021 167.

Optional IS-22
scan head fits into
print head slot.



New BJC-2000SP colour Bubble Jet™ printer – \$199^{RRP}

Canon

Price shown is recommended retail price including tax. Canon and the Canon logo are registered trademarks, and BJC, Drop Modulation Technology and PhotoRealism are trademarks of Canon Inc. All other trademarks are the property of their respective owners. 1. BC-20 Black and BC-22E PhotoRealism ink cartridges are optional. 2. B&W output for BC-20 ink cartridge at 5% coverage and colour output for BC-21c measured at 7.5% coverage. Canon Australia Pty Ltd ACN 005 002 951. CS/8411

What do APC readers really think about their Internet service providers?
By Roulla Yiacoymi

Both sides of the story

Last month, we brought you the results of APC's annual ISP Service & Reliability survey. As part of that survey, we asked readers to give us their honest opinion about their ISPs.

As you will see from the comments below, it's remarkable how different users

can have completely different experiences with the same ISP. In this roundup, we publish some of the positive and negative comments.

Do you have any comments you'd like to add? If your ISP deserves a mention

for whatever reason, email Service & Reliability at service@acp.com.au or write to Service and Reliability, APC, PO Box 4088, Sydney, NSW 1028. For a complete archive of APC Service and Reliability columns, see <http://apcmag.com/service/>.

What APC readers say about their ISPs

"As soon as you have to deal with OzEmail's customer service you may as well open your fridge and talk to the jar of Vegemite."
Ashley Wolff
Willamstown, Vic

"I do not like One.Net reducing my time credit in 15-minute (minimum) blocks."
Bob Peterson
Blakehurst, NSW

"I use Megabytes Communication. I have not been able to get my email for the past three weeks, I can go days without getting a response when dialling in, and there is no notification of downtime."
Chris Palfrey
Helens Park, NSW

"Due to recent takeovers [Charlot has made], the speed and quality of Charlot's service has been dramatically lowered."
Daniel Scanlan
Largs Bay, SA

"One.Net has the most unreliable and fault-prone network I have ever encountered."
Liam Dwyer
Strathfield, NSW

"I doubt Highlands Internet will stay in business long, as it has no idea when it comes to basic customer service."
Joanne Crichton
Mittagong, NSW

"When something happens to Trendnet's computers, [it] ignores my calls and emails."
George Ngu
Isaacs, ACT

"Optus is definitely a 'buyer beware' ISP."
Brian Ashe
Thurgoona, NSW

"Coolgold is the worst ISP I have ever used. Not only was the connection terrible but the customer service was disgusting."
Melanie Malone
Coolangatta, Qld

"I will never ever give my credit card to OzEmail. I'm still waiting for a \$12.95 refund from 1997."
Heinz Peter Schulte
Meadow Heights, Vic

"One.Net has more recorded messages than I have heard in my whole life."
Kris Treagus
Geelong, Vic

"Microplex was absolutely awful. It was almost impossible to get through before midnight and the line frequently dropped out."
John Yeo
Glen Waverley, Vic

"Charlot is more concerned about taking over other Adelaide ISPs than its long-term customers."
Simon Cheers
Cownadilla, SA

"One.Net charges high fees for technical support and I was expected to buy a tech support ticket when I could not even set up my account."
Morrison Hung
North Sydney, NSW

"AOL was a joke in terms of speed. Its front-end program is very annoying and poorly implemented."
Mark Olsen
Ferntree Gully, Vic

"One.Net must have the worst billing system in the whole world."
Matthew Jackson
Naremburn, NSW

"First Link is excellent. I have never had a busy signal, and the service is speedy and cheap. It simply provides a service without the propaganda."
Craig Avery
Merewether, NSW

"Primus is the best ISP I've used. It has great pricing, good speed, free '24 by 7' phone support, 10M of Web space and very rarely do I get a busy signal. My Net access is billed to my Primus phone account."
Adrian Burton
Gaven, Qld

"I find dingoo blue to be the best ISP I have found so far in regards to pricing and performance."
David Rowlands
Morpeth Vale, SA

"Fast Access Network is the best value on the Gold Coast. It has the only tech support guy, Nick, who actually knows what he's doing. Its customer staff are great and the total package is very professional."
Colin Walters
Burligh Heads, Qld

"TPGI is quite good. I pay upfront for three months access so I can easily control my budget."
David Thomas
Keperra, QLD

"I am more than happy to pay a premium for Big Pond's superior service and performance."
Alex Mayo
Newtown, NSW

"Hermes Internet provides quality customer support, reasonable prices and no hidden charges."
Tim Herborn
Blackheath, NSW

"Charlot Internet has really understanding and patient staff. They realise that not everyone is technically minded and explain technical terms in a respectful, non-patronising way."
Mandi Lowe
Craigmore, SA

"I am 50 years of age and don't have great computer know-how. Austasia treats me as if I am important to them."
John Cook
Lara, Vic

"Small ISPs such as Zeta will not die out. They offer something the large players do not — it's called service."
Rodney Haywood
Dundas, NSW

"With Netspace you feel more like a member than you do with major ISPs like OzEmail and Telstra BigPond Home."
Richard Ellis
Hawthorn, Vic

"OzEmail OzMega-Saver is the best value for money plan I have used."
Michael Scott
Essendon, Vic

"Rocknet provides excellent customer service and faultless connections. When you call, you know you won't get answered by a machine."
Mark Knipier
Yeppoon, Qld

"Hypermax provides a quality, well-priced service to the south-east Queensland country areas. Its customer service is very professional."
Peter Gooding
Toowoomba, Qld



Canon BJC-80
\$399^{RRP}

Canon BJC-50
\$699^{RRP}



PORTABLE
ESS · STOP PRESS · STOP PRESS · STO

Advanced colour, cable-less communications, optional scanner plus two sizes that are

Small and smaller!

Canon has a wonderfully new idea for people that need a portable printer. A choice.

On the small side there is the BJCTM-80. It is a fraction of the size of a briefcase. Yet, with its in-built sheet feeder and power adaptor included as

Drop Modulation Technology.

standard, it is designed for people who have to produce high volume output from a very small printer.

Conversely, if size is critical, there is the brand new BJC-50 with in-built battery. It's not just small, at approximately half the size of the BJC-80 it's absolutely tiny.

Equally impressive, their performance is as big as their size is small.

Using Canon's advanced Drop Modulation TechnologyTM you can print everything from colour charts, to high quality photographs. Or, in seconds you can convert to extra high-speed black and white for finished business documents using the dedicated black cartridge with 128 print nozzles!

For greater portability, both models include an infra-red port for totally cable-less communications with any suitably equipped Windows[®] 95/98 notebook or PC.

And, if you really need the functionality of an office in the space of a briefcase, both models will accept an optional colour scanner head in place of the print

Cable-less communication.

head. It takes only seconds to change the heads. You can then use the scanner head to acquire colour images, or for fax and OCR functions.*

Canon Customer Care. All Canon printers feature a one-year warranty, upgradeable to three years for minimal cost, and are backed by Customer Care hot-line support. Drivers are available for DOS, Windows

3.1x/95/98 and Windows NT.

If you need help choosing between small, and smaller, give us a call on 1 800 021 167.



The BJC-80 fits in approximately half the space of a briefcase. The BJC-50 is approaching 50% smaller still.

Optional colour scanner.

Canon portable colour Bubble JetTM printers

Canon

Can the legal system keep pace with technological change?

Catching our legal breath

In ecommerce circles the law has often been criticised for not keeping pace with technological developments. At the same time there has been some interesting international developments which demonstrate that the law is not limp or incapacitated.

The United Nations secretary-general recently stated that the laws of individual states will become less important as international rules, standards and cooperation become more important with the continued development of the global village. Despite resistance to IT law reform by interest groups which argue that reform is moving in the wrong direction, international initiatives have been making remarkable progress in laying a stable legal framework for ecommerce in

the next millennium. The impact of these international developments can be seen in Australia.

Earlier in the year the Victorian Government shot out of the blocks, introducing legislation relating to electronic transactions and data privacy. This appears to have put some pressure on the Federal Government to introduce the Electronic Transaction Bill and consider 'light touch' data privacy legislation. These developments were a consequence of international moves to introduce uniform ecommerce and data privacy laws globally.

Internet tax is one area that law-makers will not ignore. OECD countries are currently debating the Internet tax issue. They are considering whether goods bought over the Internet should be taxed at the source of supply or at the point of consumption. The US is already considering what to do when the three-year moratorium on Internet taxes under the Internet Tax Freedom Act expires on October 21, 2001.

Another key international issue is the right of a particular government or court to impose local laws on Net users (see *APC November*, page 58). Difficulties in this area have resulted in greater regulatory activity at an international level. There are many examples of this trend, such as the regulation of domain name allocation by a truly transnational body, ICANN. This has been closely followed by the World Intellectual Property Organisation (WIPO) recommending the adoption of standard international rules for the registration of domain names and dispute resolution (including online dispute resolution).

Australia has also witnessed the strong international influence of WIPO reforms, which are directly responsible for Australia implementing reforms to its copyright law in the form of the Copyright Amendment (Digital Agenda) Bill. Australia's international obligations also led to the introduction of the Copyright Amendment (Computer Programs) Act (which permits copies of programs to be made for the purposes of error correction, making interoperable programs and security testing). This timely legislative move may allow people developing interoperable

programs to avoid the debilitating effects of the High Court's decision in the *Data Access v. Powerflex* case.

Cross-border litigation may become easier in the future if the draft Hague Convention on the Recognition and Enforcement of Foreign Judgments is ratified. It would allow a judgment from a court in one country to be enforced in another. This will be an important mechanism in the digital age.

Many informal international relationships are springing up on the Internet as regulators around the world cooperate to uphold minimum standards on the Internet. In October the Electronic Enforcement Unit (EEU) was formed by members of the International Organisation of Securities Commissions so that members, such as the Australian Securities and Investments Commission, could share information that "might benefit other regulators".

However, the push by US developers for the adoption of the latest version of the draft Uniform Computer Information Transactions Act is not a cooperative effort. The draft act favours software developers' rights over consumers' rights. For example, the draft act would enable a vendor to restrict a consumer's right to sue for a defective product, donate a product to charity, use the product, or even publicly discuss or criticise the product.

If passed, it would have significant effects on the way information or software transactions are conducted over the Internet because many software providers will be based in the US and online contracts will be governed by provisions of the draft act.

While it is clear that the law is not inactive in the digital age, it is not quite up to date. However, if the current level of legal reform continues, the law will more accurately reflect the complexities of the technological era.

Leif Gamertsfelder practises at Deacons Graham & James in Brisbane. He can be contacted at leif.gamertsfelder@djg.com.au. This column is intended to provide general information only and is not a substitute for legal advice. For a complete archive of *APC Legal Ease* columns, see <http://apcmag.com/legal/>.

Links

Copyright Amendment (Computer Programs) Act 1999

<http://scaletext.law.gov.au/html/comact/10/6017/top.htm>

Copyright Amendment (Digital Agenda) Bill

<http://www.aph.gov.au/parlinfo/billsnet/99173b01.doc>

Data Access v Powerflex

http://www.austlii.edu.au/au/cases/cth/high_ct/1999/49.html

Draft Uniform Computer Information Transactions Act

<http://www.law.upenn.edu/bll/ulc/ucita/citamm99.htm>

Electronic Transactions Bill

<http://www.aph.gov.au/parlinfo/billsnet/99131b01.doc>

Internet Tax Freedom Act

<http://www.house.gov/chriscox/nettax/laws.htm>

Electronic Enforcement Unit

<http://www.asic.gov.au/pdf/99-355.pdf>



Canon's patented new LIDE technology helps these new scanners break the price/quality barrier.

Reinvent is the most over used word in the computer business. But this time it's true. Canon has just reinvented scanners.

And not a little bit, but completely.

Introducing LIDE™ Using a new, patented technology called LIDE (LED Indirect Exposure), we have fundamentally changed the way scanners work, and their price/performance ratio.

LIDE eliminates the need for costly, complex optical mirrors in image acquisition, while it maintains superior image quality and colour clarity.

Easy to use. At the same time, LIDE allowed us to design a smaller, sleeker scanner with an exceptional combination of beginner and expert controls, and with easy to connect (daisy chain) parallel port connections for Windows® 95/98 and NT 4.0.

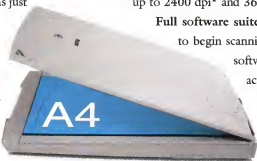
The new CanoScan™ FB 330P and FB 630P offer a choice

of 300 or 600 dpi optical resolution, plus enhanced resolution up to 2400 dpi* and 36-bit colour acquisition as standard.

Full software suite. Both come with everything needed to begin scanning immediately. The CanoCraft CS-P software works for both stand-alone image acquisition, and as a TWAIN driver for other applications. It features new, easier to use controls, and advanced controls for colour matching and image definition. Also included are PhotoExpress for image editing and OmniPage LE for OCR, a CD-ROM with full tutorial and user's manual, a parallel cable and power supply.

Canon Customer Care. The FB 330P/630P scanners feature a one-year warranty upgradeable to three years for minimal cost, and are backed by unlimited hot-line support.

The new CanoScan FB 330P and FB 630P. You can see they are different at first glance. To learn more call 1 800 021 167.



FB 330P – Now \$149^{RRP}
FB 630P – Only \$199^{RRP}

Canon

Prices shown are the recommended retail prices including tax. Canon Australia Pty Ltd ACN 005 002 951. *Enhanced resolution dependant on driver and software used. Canon and the Canon logo are registered trademarks and PhotoRealist, CanoScan and LIDE are trademarks of Canon Inc. Windows is a trademark of Microsoft Corp. in the U.S. and other countries. All other trademarks are the property of their respective owners. Canon reserves the right to change specifications without notice. CS8797

We'd all like to be more environmentally friendly, but other issues still come first when we purchase new technology.

How green is your PC?

Increasing environmental awareness will be singled out as one of the key characteristics of the twilight years of the 20th century. The 90s were a decade that embraced the environment wholeheartedly, not just as a passing phase but as a way of life.

The decade's other defining trend has been the arrival of the information age. Somehow though, these two seminal changes in consciousness seem to have been perceived as mutually exclusive. Sure I recycle everything in my home. My computer as well? Err... I guess I hadn't really thought about that.

Professor Ronnie Harding, the University of New South Wales' (UNSW's) Institute of Environmental Studies, believes the IT industry is ripe for a widespread commitment to the environment. "The technology moves so fast, there are an awful lot of things being thrown out," she said.

Harding believes the onus is on IT vendors to ensure their products are environmentally friendly. "The whole notion in the environment game is to think of cradle-to-the-grave responsibility on the part of the producer," she told APC. According to Harding, this ethos extends from designing products that can be reused or reformulated, to packaging them in an environmentally friendly way, to taking responsibility for their disposal once they have reached their use-by date.

As technology becomes increasingly mass market, more and more IT companies are moving to implement green strategies. Printer company Kyocera has built a reputation as being ecologically friendly—its products are specifically designed to lessen their impact on the environment. The NSW government body, Sustainable Energy Development Authority (SEDA), has been running its Energy Star program since 1996, installing efficiency features on all office equipment. Many companies are now also using refillable inkjet cartridges as a matter of course.

For its part, Gateway recently concluded a computer trade-in campaign. Those who

paid \$29 were relieved of their old computer in return for a \$300 discount on a new one. The old computer was then auctioned off and any parts that could not be sold were collected and recycled.



What prompts technology companies to adopt environmentally friendly strategies? Sustainable Solutions director Alan Pears believes motives vary. "Some businesses have clear mission statements acknowledging the environment and what they do," he said. "I think others get into it for more pragmatic reasons."

Pears believes a heightened environmental consciousness among the general population is driving more customers to demand green products from vendors, as well as the realisation that ecological initiatives can reduce overheads and increase productivity.

Gateway's trade-in deal was not borne out of any lasting concern for the environment. Instead, it was inspired by the news that many businesses did not intend to upgrade non-Y2K compliant hardware. "The environment wasn't the driving force behind the campaign," said a company spokesperson. "In formulating the campaign it became a concern."

In addition, rapid globalisation and the international nature of many technology companies is forcing them to adopt environmentally friendly policies. "All internationally based companies that trade internationally usually have an international environment charter," said SEDA's Allison Purnell.

Pears doubts whether the average technology consumer really cares about how green their PC or printer is at the end of the day. "I haven't found many IT managers doing the buying and selling [of computer products] with a strong environmental focus," he said.

Gateway certainly didn't find any strong evidence of consumer concern for the environment when it was running its trade-in promotion. "Most customers did not show that much interest in what was happening to the computer," said a company spokesperson.

The Kyocera experience is a case in point. While it has always made a point of highlighting its environmental credentials, the company found sales increased when it switched from pushing 'green is good' and moved to promoting the lower cost of running its printers. Kyocera is now ranked as the second-highest selling printer company in Australia, according to managing director David Finn.

Apple Computer corporate affairs manager Myrna Van Pelt believes that when it comes to buying a computer, technical specifications win out every time. "From an environmental perspective, consumers probably don't go into the nitty-gritty of where the product is manufactured, or its impact on the environment," she told APC. "They're interested in the end product and what the technology can do for them."

Lexmark chairperson and chief executive officer Dr Paul Curlander believes there is another reason. "Consumers are less sensitive [to environmental issues] because the amount they consume or discard is a lot less [than businesses]," he said.

Perhaps it is simply a case of educating computer buyers about the environmental effects of the products they use. Purnell said that SEDA's challenge was to encourage consumers to make the connection between the energy used by their computers and its impact on the greenhouse effect and global warming. "It takes a while to change people's perceptions and transform that into action," she said.

Cosima Marriner



Australia's new tax system — which will incorporate the high-profile GST — promises cheaper PCs, tax-free purchasing for most companies and simpler accounting practices. It also means another compliance headache for IT departments. So, what do you need to know? **Simon Vandore** presents the facts . . . plus 10 per cent.

The Sydney 2000 Olympic Games and the Y2K bug are constant reminders that we are approaching a new millennium. But the Y2K bug will soon be history and there are just nine months to go until the Olympics. While we are still adjusting to the fact that next year is 2000 — and thinking of a new name for the next decade (the naughties?) — there is one more problem facing Australians before life can return to normal and IT managers can sleep in relative peace: the goods and services tax (GST).

The Howard Government likes to point out that it's not just the introduction of a GST, it's a whole new tax system; income tax and business tax will be lower, capital gains tax will be phased out, and a consumption tax will be imposed on almost all purchases.

In a nutshell, what this means for technology buyers is that hardware prices will fall, while software and service prices will rise. The current 22% sales tax will vanish, and in its place a flat 10% consumption

tax will be applied to all hardware, software and IT services. Currently the only part of software taxed is the media on which it ships — IT services have not been directly taxed at all.

While consumers will see the price of software and services (such as Internet access) increase, most companies will be safe. Because the GST is a tax on the provision of a product or service, it turns all businesses into the Federal Government's tax collectors. The reward for this imposition is that companies can claim back the GST they paid on their 'inputs' — the capital and resource costs incurred in production.

It is a consumption tax imposed on the end user, not a cumulative cost applied at each stage of production. Effectively, this means tax-free IT pricing for most companies and a significant price cut on hardware for others, too. The price of software and services will rise in real terms, but because businesses can reclaim the GST on those purchases, the effect is short term — and it works both ways.

"If you're collecting tax now for the government and you sit on it for three months, that's a great thing for cash-flow," said Bruce McCabe, senior analyst with Gartner Group in Australia.

However, there are a limited number of industries that are input-taxed; that is, the GST on inputs cannot be claimed back. The financial services industry, which covers everything from banks to credit providers, is a primary example. Because many banks outsource their IT needs, they would have faced a 10% blow-out in costs under the original proposal, while their competitors, whose IT needs are covered in-house, would save money and be able to charge lower interest rates. Complaints about this disparity have resulted in amendments to the legislation which exempt banks from paying GST on a specific set of IT services, and more changes may follow. Other input-taxed areas include residential leasing and the sale of precious metals beyond the refining process.

There are quite a number of GST-free product categories, but those that directly concern IT include exported products, the sale of businesses, most education courses and materials, and duty-free goods bought by inbound passengers. Companies producing GST-free goods and services will be pleased to know that they can still claim back GST on inputs, despite contributing nothing to the tax office in return.

Another part of the new tax system, which should have a big impact on IT, is the gradual phase-out of capital gains tax. This should provide more incentive for investors in IT startups and the venture capital industry as a whole, particularly where money from overseas is concerned.

How does the GST work?

If you run a business and your annual turnover is more than \$50,000, you will be required by law to pay the tax office 10% GST for each sale you make, unless the product is legally exempt from GST. Presumably you will pass on this 10% to the buyer, but you may choose to absorb some of it by reducing your margins if the resulting price point is unwieldy.

Unfair price increases will attract scrutiny from the Australian Tax Office (ATO). Companies must be able to demonstrate how they calculated pricing and margins on every product, before and after the GST. Sellers cannot advertise a price and say 'plus 10% GST' — the tax must be included in the advertised price. For some goods and services there are Treasury guidelines on how much prices should rise, based on the difference between the removal of current sales taxes and the addition of 10% (book prices may rise by 4%, for example).

The amount most businesses must pay to the tax office is the difference between GST charged on sales and GST credits on inputs. Businesses which are run as a hobby or those with an annual turnover of less than \$50,000 will be allowed to choose whether or not to apply GST, but they cannot claim tax credits for GST on inputs if no GST has been charged on outputs.

The tax office requires companies to register as GST collectors by May 31. Once the tax laws are in place, it is up to businesses to follow the rules or face some significant financial pain.

"GST by definition is self-reinforcing," said Graham Penn, general manager of research for IDC Australia. "Fundamentally you pay it, and then you claim back all the inputs. If you don't have a system in place to capture all the inputs, you can't claim it back. So you pay tax twice... If you have a deficient system, which doesn't capture it, you pay the GST on all your purchases, plus you have to remit to the tax office 10% of your revenue."

The ATO requires regular GST 'returns' from business. Those with annual turnovers above \$20 million must report monthly and their first submission will be due in August. Companies with lower turnovers need to report every three months, beginning in October. A company that does not comply will be subject to a 16% late payment fee.

On the positive side, companies planning to invest in new equipment or training can look forward to a windfall. "For businesses the policy must be to delay hardware spending past July 1, 2000," said McCabe. "You can save 22% wholesale sales tax. And if you're thinking of deploying 5,000 new PCs in June next

year, you'd be mad not to delay that three weeks and realise the savings. It might take a little bit of time in some sectors, but in IT it will be almost immediate. If we look at hardware, particularly in the competitive landscape we have, the cost benefits will flow through within a week."

June is normally the peak period for IT sales as businesses complete the financial year, and consumer demand is highest around Christmas. The 1999-2000 year will be different. It is believed that many purchases will be postponed until sales tax is abolished and GST can be claimed back, while consumers may take instant advantage of the new prices in July. It will be hard for suppliers to gauge demand until it hits them, meaning they should brace themselves for the calm and the storm.

"If [a hardware company] gets caught with a few thousand laptops, which it over-forecast at the end of the quarter, that bites its profit for that quarter," said McCabe. "So [companies] always under-forecast the market, and what it means is that there is going to be an awful lot of supply disruption here because no supplier's going to get this right... If you're looking at delaying a large deployment through that period, get in the pipeline with the supplier and get supply allocation or it will be very, very difficult to get things on time."

As a consumer, you will most likely have to wear the increase in the price of all goods and services, except those designated GST-free. Consumers are basically 'input-taxed' like banks.

Continued on page 70

Tax timeline

1999

July 29

Wholesale sales tax rate of 32% reduced to 22%

September 21

Capital gains tax rules relaxed to benefit small businesses

September 30

Indexation of capital gains frozen

October 1

Capital gains tax rules relaxed across the board, some reductions

2000

November 1

ATO commences registration for the Australian Business Number and GST collection. Capital gains tax relief for takeovers

July 1

Introduction of 10% GST. New taxes on luxury goods introduced. \$12 billion personal income tax cuts (changes to all but top rate). Company tax rate cut to 34%

August 21

First lodgement date for those required to submit monthly GST information to the ATO

October 21

First lodgement date for those required to submit quarterly GST information to the ATO

Power up your business with a new NEC PowerMate.™



Driven by the latest in Intel® Pentium® III processors at up to 600MHz, the ES PowerMates are network-ready, management-friendly and feature TCO-lowering NLX technology. They're also highly scalable computers that offer huge benefits as long-term technology investments. For the buyer looking for up-to-the-minute technology at value prices, the VT series with a choice of Intel® Pentium® III or Celeron™ processors is the ideal choice.

**For more information contact your
NEC dealer or call 131 632.**

The NEC website is at www.nec.com.au PowerMate is a registered trademark. The Intel Inside logo and Pentium are registered trademarks and Celeron is a trademark of Intel Corporation.



Gone are the days
when flat panel displays
gave you everything except
a good picture.

The benefits of most flat panel (TFT) displays are obvious.

Compared to conventional cathode ray tube (CRT) monitors, they use 1/3 the desk space, weigh half as much and have up to 1/5 the depth.

With virtually zero electromagnetic radiation and without the electron beam scanning of CRTs they are much easier on the eyes. They use up to 60% less power. They even have approximately 10% more viewing area for the equivalent screen size of CRT Monitors. So why don't more people buy them?

Introducing CRT picture quality in a TFT screen

Admittedly, TFT displays cost more than comparably sized CRT displays. Which might be acceptable if the picture quality was there. Most leave a lot to be desired.

Which is where Hitachi comes in, with an image comparable to very high-end CRTs, and in some ways, arguably better. And Hitachi should know. After all, we are, one of the world's largest manufacturer of CRTs, and one of the few to make both the screen and complete monitor.

160 degree viewing angle

If you think TFT viewing angles are limited to 40° in the

vertical and 90° horizontal, here is yet another reason to look at Hitachi. All monitors offer a full 160° in all directions.

To this we add an exceptionally bright picture, sometimes up to 20% brighter, with exceptional contrast and advanced algorithms to better merge grey-scales in adjacent pixels.



Multi-scan resolution up to SXGA

The first thing you will probably note about Hitachi flat panel displays is the clarity. That's because even the smallest model, with a 14.1" screen, offers multi-scan XGA resolution (1024 x 768) with 16.7 million colours.

Our new 18.1" model even offers Super XGA – of 1280 x 1024.

And when you consider that the viewing area is comparable to most 20" CRTs, you suddenly have a display that will satisfy even the most demanding graphic designer.

If all this sounds a little unlike any flat panel display you have ever seen before, you are not alone. Which probably explains why it won the Best LCD Monitor award in the December 1998 issue of Australian Macworld.

To learn more call us on 1800 789 799* or visit the Hitachi web-site at www.hitachi.com.au

Continued from page 66

"Consumer prices for hardware, printers and scanners and personal computers won't come down very much," McCabe predicted. "You might save \$55, so you wouldn't delay it nine months, but you might delay it a few weeks to get that saving. Certainly there'll be so much hype in June generated around the price cuts that I expect a lot of consumers will be holding onto their purchases around then. But clearly software prices and things like ISP services and the Internet will go up 10% in real terms."

People who prefer to build their own PC may need to reconsider because 10% tax will be applied to each component. Big companies selling off-the-shelf PCs can claim back the cost of such inputs, while individuals probably cannot. While economies of scale will still make it cheaper for PC vendors to sell pre-built systems with productivity software installed, individual components will be much cheaper than before. Paying 10% tax on each component as opposed to 10% on a complete system will not make that much difference, but higher software prices will be an issue for those choosing their own.

McCabe also notes that leasing a PC is a potential trap; contracts are probably based on current prices with wholesale sales tax inclusive. A three-year contract at current prices signed in late 1999 might look a little foolish come 2001. This also applies to the various 'free PC' deals, which translate to several thousand dollars paid over several years for hardware, software and Internet services. You should examine contracts carefully, remembering that there is a balance between avoiding the upcoming increase on Internet access and software by signing up now, and benefiting from cheaper hardware later.

Useful phone services

Tax reform infoline (general public)
13 61 40

Tax reform infoline (business)
13 24 78

GST Start-up assistance enquiries
(02) 6263 4490

ATO tax seminar hotline
1300 138 990

The IT headache

Just when we've come to grips with Y2K and many systems are 'locked down' awaiting the date rollover, along comes the new tax system. It creates another compliance problem, and the range of software able to cope with adding and subtracting 10% here and there is fairly broad. The wisest among us started work on this problem as soon as politicians raised the idea of a consumption tax, but many have only just begun their GST projects and, as with Y2K, there is an immovable deadline.

Don't blame the ATO, however. It's a matter of politics. If the new tax system was delayed another 12 months, it would be implemented far too close to the next election for comfort.

"The tax office has had to wrestle with a lot of complexity introduced by Parliament. It had to make the rules work from the legislation which was introduced by Parliament and modified at the last moment," said Penn. "So you can't blame the tax office, because it has been working as hard as it possibly can to get paper out the door to all the tax agents and accountants."

Obviously, accounting packages, transaction processing software and billing systems have to be brought up-to-date. On a small scale this may mean upgrading to a new version of Quicken or Money, but companies running more complex software will have a difficult time. In a worst-case scenario, high-end financial packages like SAP may have been implemented using the GST field for something else, meaning a great deal of restructuring is required. Australian Competition and Consumer Commission regulations state that invoices must make the pricing structure clear and that the GST must be included. Contracts must be rewritten to include GST beyond July and if this is not done, GST cannot be charged. However, Treasury will still collect 10% on all sales, which represents a significant penalty for the company involved and a huge workload to catch up.

Point-of-sale equipment must be able to determine the price of a product and whether it is exempt from GST, so retailers may have a lot of work to do. Some retailers have been slow on the uptake because they have not yet had to deal with wholesale sales tax directly. From July, their cash registers may even have to check items passing the scanner against a database of GST-free goods. Everything must be set up to cater for the Australian situation, not an overseas-style consumption tax.

Useful tax links

Department of the Treasury
<http://www.treasury.gov.au/>

ATOassist
<http://www.ato.gov.au/>

Budget 1999-2000
<http://www.treasury.gov.au/budget/>

ATO: The New Tax System
<http://taxreform.ato.gov.au/>

Treasury: A New Tax System
<http://www.taxreform.gov.au/>

Review of Business Taxation
(the Ralph report)
<http://www.rbt.treasury.gov.au/>

GST Start-up Assistance Office
<http://www.gststartup.gov.au/>

Federal Government Business Entry Point
<http://www.business.gov.au/>

"Much of the software used in Australia is GST-compliant already," said Penn. "It's just zero-rated. In other words it goes through the motions and puts zero into a bucket. So what you've got to do is GST-enable it. The hard part of that is you've got to provide for the exceptions."

Businesses also have to change their prices, which could involve anything from changing the labels on all stock, to updating huge electronic lists. Meanwhile, inputs ranging from travel expenses to capital equipment must also be tracked to save companies money when it comes to making their next GST payment. Staff must be trained to understand how the GST works and how to use the updated systems because simple misunderstandings could be quite costly.

Where it is unclear how the GST should be accommodated, industry bodies can help by suggesting a consistent standard. The only industries that probably don't need to change their accounting to a great extent are those already getting tax-free pricing.

Estimates of the cost of GST-compliance measures are as high as \$3 billion. Large companies are spending in the millions, and even small businesses could end up paying thousands for upgraded systems. Add Y2K costs and it's been a very expensive couple of financial years, but there are no other major compliance projects in sight and any government is likely to wait several years before making any more major changes. There will be

Need Extra Power Backup? Try Macase Redundant Power Supply!!

Our Brisbane Warehouse is ready now for your local delivery, please inquire for details!

Super NT Files Server

Business File Server

Enterprise ATX Series



NT-A15 SR-A15 SR-A19



KA-600



KA-555 KA-630 KA-650 KA-670

19"/8U Rackmount

19"/4U Storage Chassis

19"/4U Rackmount



R1-050



R1-011 R1-021



R1-075

Removable H.D.D Rack

Micro ATX Series

5.25" Removable Backplane



MR-101 MR-103 MR-102ZW



KA-480 KA-485



MB-480 MB-410

Phoenix ATX Series

19"/5U Rackmount

Storage Products



CA-031 CA-041 CA-051 CA-711



R1-050



**Wide Selection of PC Case, PSU, Storage Case, Rackmount Case,
Sever Case, RAID System Case and
Hot Swap Mobile Rack Available Now.**



Headquarters
MACASE Industrial Corp.
2F-2, No. 18, Lane 609, Sec. 5, Chung Hsin Road, Sen Chung City,
Taipei Hsin, Taiwan R.O.C.
TEL: 886-2-2278-3269 FAX: 886-2-2278-4132
internet URL: <http://www.macase.com.tw> E-mail: sales@macase.com.tw
Australia/Sydney
Unit 3, 100-108 Anquith Street, Silverwater 2128, N.S.W. Australia
TEL: 61-2-97480001 FAX: 61-2-97480095

amendments to the tax legislation however, just as there will be a few extra tweaks to Y2K work when the date arrives. But the parallels between GST and Y2K projects should not be taken too far.

"It's a different set of skills," said McCabe. "You can't just take Y2K staff and throw them at the GST problem. Y2K has been very much a matter of going and finding date fields, identifying them and fixing them. GST requires financial skills, knowledge of financial systems and an understanding of how the tax will work."

None of the companies contacted by APC wanted to go on record with their comments about the new tax system, but all those that sell hardware are happy that the abolition of sales tax will reduce prices, making their products more attractive to consumers. Smaller organisations seem somewhat confused about what they should be doing to prepare, blaming it on a lack of information from the ATO (larger organisations said they received adequate instructions). Service companies were the least willing to comment, but did not make any criticisms of the new system.

Complications arise when companies are involved in both taxed and GST-free activities. Gartner Group cites universities as the primary example. Although education will theoretically be a GST-free industry, these days many universities are involved in selling their services to others, and may also have a hand in providing financial or retail services on campus. Some confusion may occur in the government sector, because council rates and transactions between many government organisations will be tax free, while the services provided by most of these entities will be taxable — including financial services (such as loans and grants) provided by government.

McCabe offers the example of a university purchasing a supercomputer and trying to determine how much it is likely to be used for education, and how much for commercial activity. "For one they can claim back the GST and for the other they can't. So they have to make a percentage formula for that system — say about 30% of the CPU time is allocated to the taxable activity. So we can claim back about 30% of the GST we paid on that system."

He suggested that as in Canada and New Zealand, companies will have to come up with blanket formulas and perform regular audits, taking an educated guess at their GST liabilities.

GST and the Net

Internet access, as a service on which sales tax has not previously been imposed, is likely to be an area where prices will rise as a result of the GST. As a relatively new industry, prices should theoretically fall due to economies of scale and huge uptake, but the ISP industry and its customers will really feel a 10% increase on monthly rates.

But it may not be that simple. ISPs should benefit greatly from the abolition of wholesale sales tax on hardware and the fact they can claim back GST on inputs.

"In the past, Internet providers have had to purchase hardware such as computers, access servers, modems, desks and chairs like any other business," said Peter Knox, general

manager of Pacific Internet.

"Unfortunately, however, the majority of our costs, which is Internet access and telecommunications services, have not been taxed in the past because they are services."

The overall effect could be a slight price increase, but nothing is certain. If your ISP's service is based on a contract that will continue past June next year, GST should be written into it already. ISPs should also inform their non-contract customers of possible changes. Most Internet companies that APC spoke with were aware of this — some had put GST in their contracts months ago, but most were not yet willing to predict how individual consumers would be affected.

Other GSTs

When the consumption tax was introduced in New Zealand in 1986, the Government drafted its legislation in consultation with business. In Australia in 1998, the Government introduced legislation, thrashed it out in Parliament, and then consulted business with the Review of Business Taxation (the Ralph report). Although Australia and New Zealand's implementation period was similar (12 months), this decade is a much more complex business and financial environment with a far greater reliance on IT.

"Their legislation was very clean; it had no exemptions like food or medicines," said McCabe. "We were the only nutters that went about doing that. And our friends across the Tasman laugh at us over that. I've spoken to so many people and they've said 'how can you possibly implement it that way?' And we're about to find out."

"New Zealand went through a period of about 18 months of agony and then it worked fine. Part of it is disabling all the wholesale sales tax stuff, which is already built into stock control systems and invoicing systems," Penn said.

Canada, which introduced a GST in 1996, has had more problems than New Zealand due to state taxes which duplicate the federal system. Fortunately in Australia, the Federal Government is forcing state governments to abolish many of their stamp duties and secondary taxes in return for a cut of the GST revenue.

One definite benefit of a consumption tax is that it is hard for anyone to hide

from the tax collector. Tax fraud should be reduced, but there are some downsides — it is difficult for the tax department to verify whether input costs being claimed are genuine, and it is next to impossible to police Internet trading or barter. Genuine mistakes will also be made, and as the ATO will also be learning the ropes, you can reasonably expect some leniency in the first few months. We may need it.

"Probably two-thirds of large Australian businesses or large organisations — that includes State and Federal Government — are not going to be fully compliant come July 1, 2000," McCabe predicted. "Now that's a big statement to make. I'm not saying they're going to go out of business or they're not going to be viable. What I am saying is that they will have lingering problems post July 1 where they're not collecting information on their inputs properly or they're not charging GST on all of their outputs effectively, then they're losing money as a result. Or maybe some of their staff aren't trained and they're making mistakes."

But once we get it right, there are long-term benefits for Australia's international competitiveness. The gradual reduction of capital gains tax should attract overseas investors away from Asia — this may even happen early, in anticipation of the changes. But the types of industry Australia attracts will probably remain the same.

"Even if we do everything, which is believed to be the intent of Parliament, some people will argue that it more or less just levels the playing field — it doesn't put you in a leading-edge position," Penn said.



YOUR ENEMIES

**WHEN OFFICE POLITICS GET OUT OF HAND
THERE'S ONLY ONE WAY TO SETTLE IT - WIREPLAY,
THE ONLINE GAMING NETWORK THAT LETS YOU
CHALLENGE FRIENDS, FOES AND STRANGERS
OVER THE INTERNET.**

**THROW DOWN THE GAUNTLET ON EVERYTHING FROM THE
LATEST GOLF AND STRATEGIC GAMES TO DAYTONA AND QUAKE.**

**MAKE SOME NEW ENEMIES AND JOIN THE
THOUSANDS OF ONLINE GAMERS AT
WWW.WIREPLAY.COM.AU
AND STOP PLAYING WITH YOURSELF.**

Wireplay is a registered trade mark of British Telecommunications plc and is operated exclusively in Australia by Telstra Corporation Ltd.
ACN 051 775 556. All product names are the property of their respective owners.














Wireplay
The online network

"We don't see any evidence in Australia that the Federal Government is moving to introduce the sorts of tax holidays or tax incentives to capture big IT infrastructure projects. What we are seeing more is people trying to build IT services using the smart people resources we've got rather than building bricks-and-mortar incentives for the IT industry. In other words, we are using the multinational work force, the fact that we can speak English and that we're in the right time zone to service Asia. Those sorts of things will enable you to provide helpdesk or professional services, rather than fab plants or production lines, for the Asia-Pacific region."

This time next year, the new tax system will have been in place for several months. The Olympics will be over, Y2K will hopefully be forgotten and there should be some stability in Australia as the Government sits tight, letting business find its feet in a new environment. Between now and then, things will get complicated and there will be a lot of fast learning to be done. But for the IT industry, this change is for the better. ■

Counting the costs of GST

Product/service	Ex-tax	Current price	New price
Budget PC 	\$1,640	\$2,000	\$1,804
Top-range PC 	\$4,918	\$6,000	\$5,410
9.1G hard disk 	\$599	\$730	\$659
Top-end graphics card 	\$369	\$450	\$406
Basic laser printer 	\$1,107	\$1,350	\$1,218
Network starter kit 	\$200	\$244	\$220
Office suite 	\$720	\$720	\$792
Game 	\$90	\$90	\$99
Antivirus software 	\$80	\$80	\$88
Sore throat remedy 	\$12	\$14	\$14
Roast chicken 	\$7	\$7	\$7.70

Note: Prices are estimates based on average current pricing. The media software ships on is currently taxed, but this has a negligible effect on price.

Need better back-up?

Your data is valuable, so finding a data media product you can trust is invaluable. That's where Sony comes in. Our commitment to quality and innovation guarantees increased reliability and total peace of mind. In short, better media means safer storage. So, no matter what you back up with, Sony has you covered. To learn more, visit www.sony.com.au or call 1800 226 429. It's a Sony.



4mm QOS



AIT/8mm



Transit/QIC



OLT



Micro Floppy Disc



MO



DVD-RW



CD-RW

SONY



Finally, e-commerce with **no** Internet transaction fees

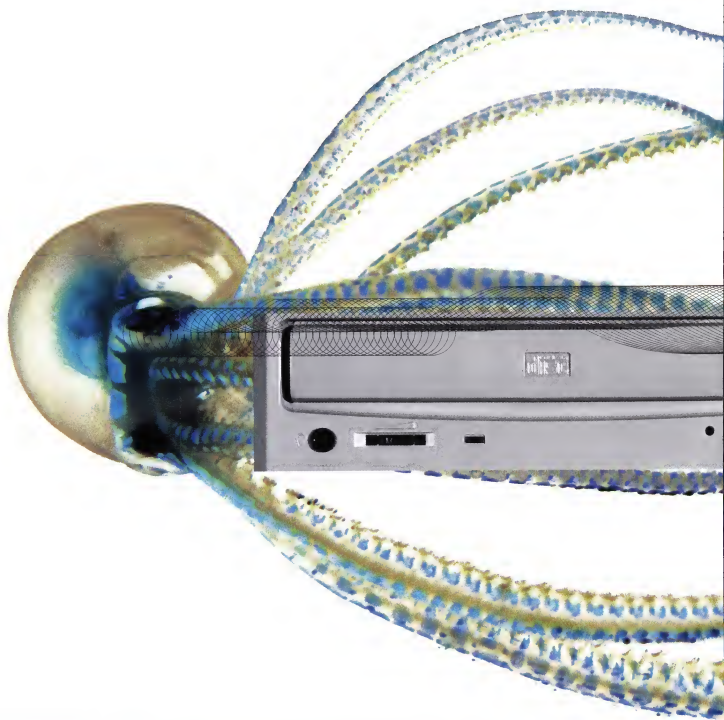
We've just removed the barriers. **TheMerchant** is an e-commerce solution allowing secure, on-line credit card payment processing for customers wishing to purchase products or services on your Web site. No Internet transaction fees. A monthly subscription fee of only \$50 per month*. And a once only set up fee of just \$350.

TheMerchant[™]
e IS FOR EVERYONE

TheMerchant includes everything you need to know to do business on your website:

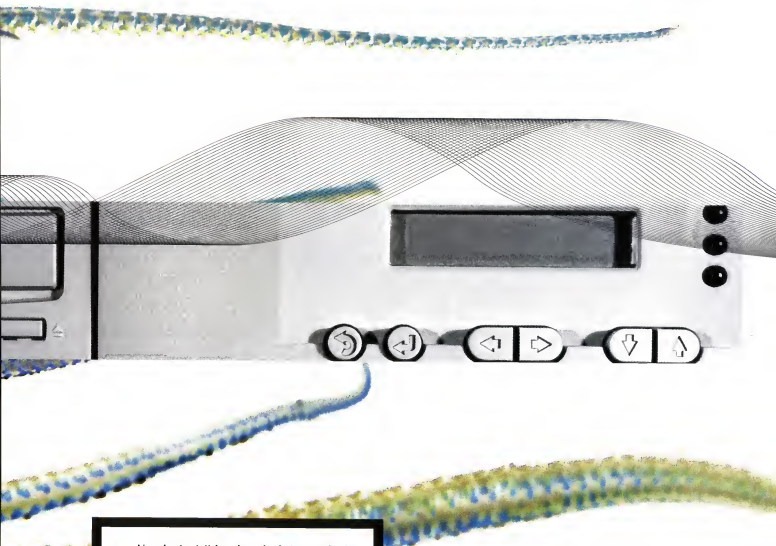
- on-line credit card payment processing with no Internet transaction fees
- SSL secure server technology ensures bulletproof transaction security for both you and your customers
- free MerchantWare allows for the quick and easy addition of functions such as shopping carts and catalogues to your site
- fast, efficient domain name registration
- business-class Web hosting on the world's fastest Web server technology

Call **1800 78 80 82** to hear just how easy e-commerce can be.





pentium® III
xeon™



Nearly invisible, they lurk beneath the substructures of your business, noiseless. Our netservers are designed to operate and repair themselves without human intervention.

(Isn't the best technology the kind you don't have to think about?)

Move on. Quit worrying about the things you cannot see.

Engineered on a human level.

www.hp.com/pc-au

 **HEWLETT®
PACKARD**

GIGABYTE

TECHNOLOGY

Intel® 820 Motherboard Series

4X AGP

FSB133

intel
820

ATA66

PC800

RIMM

Dual
BIOS

GA-6CXB Intel® 820 AGPset



- Slot 1 for Intel® Pentium® II / III Processors
- 100/120/133/150* MHz System Bus
- 2DIMM & 2 RIMM (Rambus inline Memory module)
- AC97 Audio & AMR Slot
- Aureal AUB10 PCI Sound onboard
- Includes DualBIOS™ technology
- Supports ACPI & STR
- Supports Ultra ATA 33/66 IDE Device
- H/W Monitoring & Intel® LDCM® Utility
- PC99 Connectors

Supports
2 RIMM
2 DIMM

GA-6CX Intel® 820 AGPset



- Slot 1 for Intel® Pentium® II / III Processors
- 100/120/133/150* MHz System Bus
- 3 RIMMs up to 1GB RAMBUS
- AC97 Audio & AMR Slot
- Aureal AUB10 PCI Sound on board
- Includes DualBIOS™ technology
- Supports ACPI & STR
- Supports Ultra ATA 33/66 IDE Device
- H/W Monitoring & Intel® LDCM® Utility
- PC99 Connectors

Cost-Effective & High Performance Graphics!

GA-622 NVIDIA RIVA TNT2™ Model 64



- NVIDIA RIVA TNT2™ Model 64 graphics processor
- 32MB fast SDRAM on board
- AGP 4X/2X with AGP texture
- 300MHz high pixel rate RAMDAC
- Maximum 1920x1200, 32-bit true color in 2D display
- Optimized for Direct3D and OpenGL LCD
- Windows 95/98 & Windows NT4.0 drivers support



*These speed settings are not guaranteed by GIGABYTE. The specification and pictures are subject to change without notice. All trademarks and logos are the properties of their respective holders.

Intel® Pentium® II/III, Slot1 Dual BIOS STR

GA-6WXM-e Intel® 810e AGPset



- Supports Intel® Pentium® II / III and Celeron™ Processors
- 66/100/133 MHz System Bus
- 2 DIMMs up to 512MB DRAM
- AC97 Audio & AMR Slot
- YAMAHA 744 PCI Sound
- 4MB 3D Display Cache
- Supports Ultra ATA 33/66 IDE Device
- Includes DualBIOS™ technology
- Supports ACPI & STR
- H/W Monitoring & Intel® LDCM® Utility
- Feature connector supports DFP & TV-out

133MHz
FSB

Supports ATA66

Upgrade Your Life



GIGA-BYTE TECHNOLOGY CO., LTD.
5F, No. 9, Alley 6, Lane 45, Pao Shin Road,
Hsin-Tien, Taipei Hsien, Taiwan, R.O.C.
Tel : 886-2-29184839
Fax : 886-2-29184842 29131534
http://www.giga-byte.com

Authorized Distributors (in alphabet order):

Area	Company	Tel. No.
A&A	A&A	+61 2 96301588
BBF	BBF	+61 2 96300941
Global	Global	+61 2 96443900
Hallmark	Hallmark	+61 2 97465811
A&A	A&A	+61 3 95620022
BBF	BBF	+61 3 97614299
Global	Global	+61 3 93356088
Hallmark	Hallmark	+61 3 95408355

Area	Company	Tel. No.
Queensland	A&A	+61 7 38463555
A&A	A&A	+61 7 38521899
Perth	A&A	+61 89 4433388
Adelaide	Hallmark	+61 8 83403740
Darwin	Hallmark	+61 8 89494451

DIGITAL DISEASE



Computer viruses are one of the most hyped threats of the technological era and have spawned a boom industry: antivirus software. New viruses appear all the time, and each is more complex than the last. But are they the threat that some would lead you to believe? **Simon Vandore** separates virus fact from virus fiction.

A computer virus is a software program, and although most software is written to assist its users, virus software is usually written with malicious intentions. It is designed to attach itself to another file or the boot sector of a disk and do two things: to create copies of itself, or 'replicate', and to cause something to happen on a computer, or 'deliver a payload'.

The first virus was developed in 1983 as an experiment on a Digital VAX. Viruses were first identified as a problem on PCs in 1987. Since that time there has been a proliferation of viruses and tens of thousands now exist, although very few are actually 'in the wild' and spreading. Most existing viruses are kept in the files of antivirus software companies, and because the viruses are known to the antivirus

software, it is unlikely they will spread. However, the culture of virus writing is to make new and better viruses to avoid detection by antivirus software, and it is these new viruses which cause concern.

Until 1996, it was generally accepted that viruses could only exist in program files, never data. This changed when Microsoft introduced its powerful macro scripting language to the applications in its Office suite. This development made it possible to enclose harmful instructions in a data file. Viruses now also include malicious macro scripts attached to data files; 'worms', which propagate themselves across networks; and 'Trojan horses', which are designed to make a system vulnerable to other forms of attack.

A Morgan & Banks Technology survey released in June reports that of 1,000

Australian companies, 52.9% suffered virus attacks in the preceding 12 months. About half of those surveyed said the viruses arrived via email attachments or the Internet, which is consistent with antivirus companies' claims that macro viruses attached to documents are now the most common threat. In fact, even as this article was being written, a Word macro virus accidentally sent by a colleague arrived in my inbox.

"Virus writers exploit the technology of the times and any weak links in it," said Frances Ludgate, marketing director with Melbourne-based antivirus house VET (now owned by Computer Associates). "The biggest explosion of viruses came when email really took off, since, at the same time, the macro language was becoming standard across the Microsoft products."

"Macros are fairly easy to write," said Robyn Ord, general manager of Australian antivirus company Leprechaun Software. "They're also easy to use for trigger dates and things like that, because they can sit there and not be noticed. There is more of a chance of a trigger date causing some disruption, than with something that actually [has to be] fixed straight away."

The increasing popularity of electronic commerce and email presents specific problems for companies, which have to tread carefully on the legal issues presented by viruses. If one company's operations are affected by a virus received from another, a damages suit could follow. Therefore, many companies have instituted strict workplace regimes, which include disciplinary action for employees who use personal disks or forward email attachments on the company network. Thin clients or PCs without disk drives are attractive options in such environments.

"Where you've got networks you can have viruses that will spread very, very fast," warned VET technical communicator Luke Hoban. "And if you've got a fairly nasty payload, which triggers pretty much immediately, then you've got a real problem, particularly if you can go back and reinfect the machine afterwards. There have been numbers of companies that have basically gone in and pulled the plug on their network connections for servers and workstations."

If you own an antivirus software package, it is vital that you keep it up-to-date. Most have downloadable virus definition updates, available every few weeks. Updates contain new data which enables the package to find and clean up the latest viruses. If you don't update the software regularly, it won't do its job properly.

"Users who have purchased our product or somebody else's five years ago come to us and wonder why they're infected," said Ord.

In an attempt to evade detection, virus authors have adopted encryption techniques. At first it was possible to trap encrypted viruses whenever they decrypted, but some of the most dangerous viruses now use polymorphic encryption where the decryption routine is random each time, meaning there is no telltale signature when they activate. These viruses pose a greater danger, so antivirus companies have painstakingly developed scanning engines that look for patterns used by the encryption technology involved and always supply downloadable updates

when something new appears. When virus technology changes, so must the scanning method.

Antivirus companies are in a difficult position. They must be seen to be squeaky clean and secure, but because their sales benefit from the existence of new viruses and customers are at the mercy of their updates, they are always under suspicion. They are often accused of developing or spreading viruses to expand their market.

"Our response is always twofold," said Ord. "We are very busy with viruses that are not written by us to even bother doing that ourselves. And our company's integrity would be seriously at stake if we were ever seen to write viruses in-house. In fact we flatly refuse to even distribute viruses — we've been asked on numerous occasions by



people testing our software if we could provide them with a couple of viruses so they can see what an infection looks like. We never ever do. Never have and never will."

Ord adds, "We were considering exporting to the Chinese market, but a proviso of being cleared to sell in China was that we had to provide a sample of every virus we detected and cured. We pulled out. If we hand it over on a disk, we've got no control over where that goes, but it's got 'Leprechaun Software' all over it. It's just not worth the risk. We wouldn't have a company left."

Know your enemy

Most traditional viruses infect COM or EXE files (commands and programs), attaching themselves to a file and executing their replication or payload routines when it is run. These viruses also usually load themselves into RAM to infect any other COM or EXE files accessed.

The most commonly found traditional viruses go straight for the boot sector of a

disk drive, so that when a drive is accessed (such as when a PC is booted) the virus is loaded into RAM first. It then proceeds to infect any other disk to which the computer has write access. Although the prevalence of boot sector viruses has been reduced now that it is rarer for files to be transferred via floppy disk, they are still a problem.

Payloads vary. Some viruses have no payload whatsoever and exist merely to propagate themselves, but others will destroy files, format or encrypt a hard drive, or create annoyances such as increasing file sizes to fill all the space on a disk or preventing the function of a vital piece of software. Some deliver pranks that are not necessarily harmful, such as popping up a message or picture from the virus author.

The Jerusalem virus, otherwise known as Friday 13th, is a well-known example of a traditional virus infecting COM and EXE files. It slows down a computer by writing itself to every program run, causing program files to get larger each time. On any Friday 13 its payload is different — any COM or EXE files used are automatically deleted.

A classic example of an old, but still prevalent, boot sector virus is Stoned.-Michelangelo. It can remain undetected for a long time, activating only on March 6 (Michelangelo's birthday), when it proceeds to delete 17 sectors at the start of a hard disk, rendering all data unreadable. Other viruses still found in Australia include AntiCMOS, which is a very simple but annoying boot sector virus that makes the PC unable to see its hard drive (though it does not damage data), and Form, which writes its own information into the boot sector of any hard or floppy disk used in an infected PC, causing bad sectors to appear.

All of the above viruses are easily detected and removed with modern antivirus software, so it is now rare for them to cause serious problems in big organisations.

Macro viruses

This new breed of viruses usually involves the Microsoft Office macro scripting language. Macro viruses are possible in other scripting languages, such as VBScript, but the penetration of the Microsoft brand and antagonism towards Microsoft among virus creators means the vast majority of macro viruses only apply to Office. In this

Continued on page 84



"It was awesome.

I just stepped
out into
space.

No, really,

I DID it!

I musta been 100 feet up,
man, it was KILLER ..."

Melissa's 15 minutes of fame

Time to think back. What was the computer virus that came before Melissa? How about the name of the virus that followed Melissa?

If these two questions leave you scratching your head in vain, it's not because there haven't been any noteworthy viruses that predate or postdate Melissa. It's also not because those viruses pose less of a threat to computer users. In fact, Melissa is a relatively harmless virus that simply clogs email systems, but others like the new CIH viruses are far more sinister because they have the ability to destroy all of the data on your hard drive. It's simply that none of them — Happy99, Worm, Worm.ExploreZip or Win95.CIH — managed to excite the interest of the mainstream media in quite the same way.

Why did Melissa command so many more column inches and so much more air time? Some say it's all in the name. Put simply, Melissa makes great copy. Consider the way the virus was reported in the mass media:

- 'Bad girl's here'
Daily Telegraph, March 31, 1999;
- 'Melissa: A very bad girl',
the Australian, April 10, 1999;
- 'Melissa was fast. Melissa was sneaky. And boy, did Melissa ever get around'
Newsweek, the *Bulletin*, April 13, 1999.

Nathan Vass, chief of staff at the *Sunday Telegraph*, believes the virus' catchy name was instrumental in garnering widespread publicity. "If anything gets given a Christian name you get a play on words," he told *APC*. "If you call a virus T241 it's probably not going to make a lot of headlines."

Vass was keen to distinguish the tabloid approach to covering computer viruses from that of the broadsheets. He said that whereas the broadsheets have dedicated IT sections, the *Sunday Telegraph* does not report computer viruses as a matter of course.

"I don't know that average people care that much," confessed Vass. "It's a tough story to make all that sexy." Vass said tabloids tended to seek out the more "interesting or quirky angle" to make the issue more accessible to readers. "It shows what you have to do to get into the main section of the paper," he admitted.

But the nickname for one of the CIH viruses, Chernobyl, is also tabloid-friendly, so why was it not embraced to the same extent by news organisations?

Some media outlets attribute the inordinate attention given to Melissa to the ingenious work of PR companies. Network Ten chief of staff Andre Blunden is convinced this is the case. "A lot of it was generated internally by its own heat by well-placed PR people, people with clients in antivirus software," he said.

The manipulation Ten felt it was subjected to over Melissa has left the television station extremely wary of covering computer viruses. "We've done nothing since Melissa," said Blunden.



"We felt it was overdone, over-emphasised and as a result we're looking at anything in the future with a very sceptical eye."

Despite the disproportionate coverage Melissa received, computer viruses generally received far more attention by the mainstream press this year than ever before. New Zealand journalist David Armstrong attributes this sudden media fascination to the increasing adoption of technology.

"Computers are now vital to businesses and common in homes, so viruses... are a worry for more than just a nerdy minority group," he wrote in the *Christchurch Press* ('Saboteurs in Cyberspace', September 27, 1999). "The growth of Internet commerce and email is also adding to the problem. The more connected you are, the more vulnerable you become."

According to the Australian Bureau of Statistics, 40% of Australia's adult population (nearly 5.5 million) accessed the Internet in the 12 months to May this year. This represents a 50% increase on the same period last year. The Internet is fast becoming as ubiquitous as TV or radio.

So much so that mass-market women's magazine *Woman's Day* now runs a weekly 'Ms Megabyte' technology column. Author Yvonne Adele (pictured) said the purpose of her column is to educate readers about technology that has a lifestyle slant.

Adele believes the Melissa virus was the catalyst for the transformation of computer viruses into mass media fodder. "Viruses before were mainly in the realm of hardcore Internet users and geeks," she said. "Melissa made them much more accessible and widespread. Now viruses are available to anyone using Microsoft Word and email." The increasing number of Australians at risk of being exposed to computer viruses prompted Adele to devote a recent column to the subject ("Warning PC Plagues", September 27, 1999).

Vass pointed out media coverage of viruses is also influenced by the audience for whom the news is intended. Whereas some news organisations' gambit does not run to computer viruses on a regular basis, others such as ABC NewsRadio include a strong technology component in their overall news mix.

"We don't go out of our way [to cover computer viruses]," said NewsRadio network manager Ian Wolfe. "We simply cover computer viruses as part of our general news coverage. We have more science and technology reports than any other."

According to Wolfe, NewsRadio's target audience is "interested in the world around them" and he believes a higher proportion of the station's listeners are connected to the Internet than the general population. "They want to know everything about the Web and hear the latest in science and technology."

Ultimately it is media consumers that will determine the coverage assigned to computer viruses. All the news organisations *APC* spoke to agreed that any virus with the potential to affect a large number of people will be reported. **Cosima Marriner**

"told ya!"



Yesterday the world communicated by telephone. Today it's the web. With the Kodak DC215 digital camera, you can take and send images inexpensively, anywhere on the planet in seconds.

Get digital. Check out our new range of digital cameras at www.kodak.com or call 1-800-674 831.



Continued from page 80

sense, a macro is a set of instructions saved as part of a document which allows and uses parts of the Office suite to execute its functions. If Microsoft were to place too many restrictions on the use of scripting in Office, its product would be less useful, but the company has made it remarkably easy for virus authors to exploit the links between its applications. There are virus protection measures in Office apps, but modern macro viruses are capable of disabling this aspect when they run.

Microsoft Word macro viruses are the most common. The one that arrived at APC was W97M/Marker.A, which creates a VXD file in the root directory of the hard drive and attempts to find and infect all DOC files, then deletes its own VXD. The virus' only purpose is to replicate, which it does very efficiently. In this case it arrived via email with an invoice document from an external source, and our antivirus software picked it up immediately when the document was double-clicked, before it was loaded into Word.

The infamous Melissa is a macro virus that exploits the relationship between

Microsoft Word and the Outlook Express email client. Melissa emails itself to the first 50 people in Outlook's address book. These addresses may be mailing lists, which means it is possible for one user to transmit the virus to hundreds of others. If the minutes of the hour are the same number as the current day of the month, it will also insert a quote from *The Simpsons* into the current document. Apart from overwriting the first document in the user's current directory, Melissa doesn't have any destructive effects on the host computer — but the document it chooses to forward could be embarrassing for the sender, even beyond the mass spamming of friends and contacts. The big concern for system administrators is the potential volume of email generated by an infection.

Worms

A worm is a virus that is designed to spread over networks — the Internet being the primary example. Perhaps the most evil of the current crop is an email worm called Worm.ExploreZip.

Worm.ExploreZip exploits Microsoft's email programs, both Exchange and some

versions of Outlook. It grabs addresses from all messages currently in the user's inbox (those who are most likely to expect email from the infected PC) and sends a reply with the words, "I have received your email and I shall send you a reply ASAP. Till then take a look at the attached zipped docs." An attachment called ZIPPED_FILES.EXE is sent with the message. If the recipient runs the file, they will see a standard WinZip error message stating that the archive is not valid, but this is just a smokescreen. The virus quietly manipulates any WIN.INI files on all connected disks to load the virus on startup under the name _SETUP.EXE and creates a file called EXPLORE.EXE in the user's system directory. This is also run by WIN.INI on startup and proceeds to permanently delete all data files created by Microsoft Office applications on any disk to which the infected PC has write access (including network drives), while the virus continues to spread itself via email.

Unfortunately, Worm.ExploreZip hasn't received much media coverage — instead, a relatively harmless worm called Monopoly has been hyped (see 'Melissa's 15 minutes of fame', page 82). It uses the Outlook address book to send a message and picture

Virus myths

Many users have an irrational fear of binary viruses, often due to misinformation. For example, a virus cannot be transmitted simply by bringing an infected floppy disk near a computer — the disk actually has to be placed in a drive and accessed. A virus cannot spread from your PC to your VCR, dishwasher or other household equipment, even if that equipment uses embedded chips. Except in the case of macros embedded into data files, viruses cannot cross from one operating system to another. Although there are many parallels between the behaviour of binary viruses and biological ones, medical analogies should not be applied to the infection process on computers.

The mass media has recently been predicting that virus writers will take advantage of Y2K problems to cause havoc. A couple of new viruses have appeared purporting to be important Y2K updates for your system, tempting the user into running the attached file. But viruses that actually exploit the Y2K bug are pure media speculation.

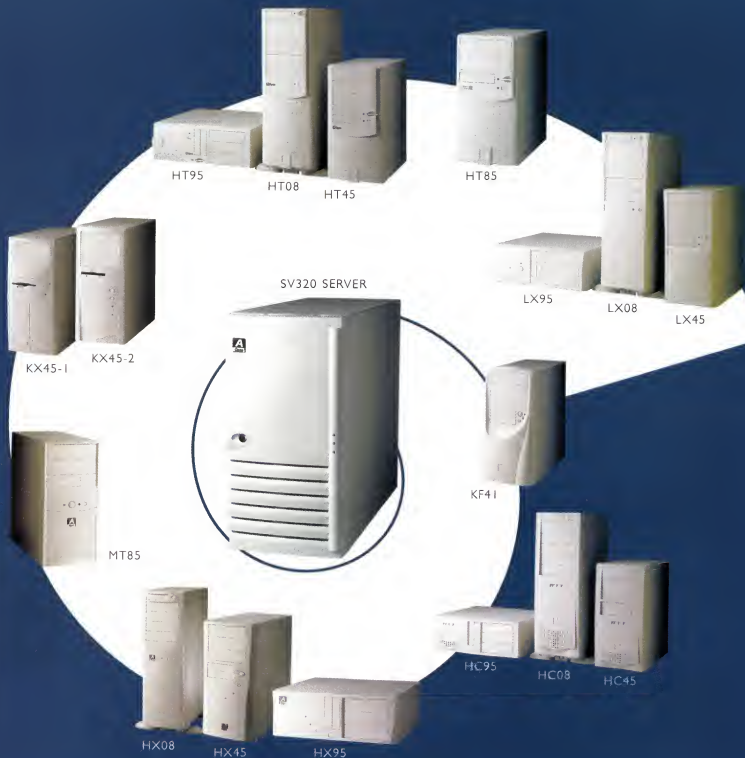
Irrational views of computer viruses also lead people to spread hoax virus warnings. Most of the virus warnings circulating on the Internet are fake and before forwarding any such email, it is well worth checking a Web page such as <http://www.symantec.com/avcenter/hoax.html>. Typical hoax tactics include warning you that reading an email with a certain phrase in the subject line will trigger a virus (which is impossible), or asking you to forward the message to everyone you know. If this warning were real, it wouldn't need to ask you to forward it. So, in the case of a hoax, the message acts like a virus and is spread because it convinces you to send it to everyone you know.

Some of the most common hoax warnings include subject lines such as Penpal Greetings, Good Times, Guts to say Jesus, Join the Crew, and even a warning that a Yellow Teletubby file will destroy your data. There are also several hoaxes in circulation regarding Y2K problems, stating either that Windows will fail on January 1, or warning of a 'Year 2000 Virus'.

The rule that simple email (text) cannot be a virus hasn't changed. Simply reading

an email will not infect your system. If an infected file is attached to the email, then your computer can be infected if you open or run the file, but this takes some carelessness on your part. Modern antivirus software can scan attachments either as they arrive or immediately before they are run and remove the offending virus before it causes any damage, so it is worth installing such a product.

"In a very, very weird and rare case it is possible that you can set up a desktop so that it will automatically execute the files that are on it, but that is certainly not the standard for 99.99% of the people using computers — and certainly not the people with lower levels of IT knowledge," said VET technical communicator Luke Hoban. "You can open the message, you can read the text. It's when you actually go to run the attachment that you need to be concerned. If [a warning says] you'll receive a message with a certain subject line and 'don't even open it or you'll lose your hard drive', well that's just not real. But it has the effect of lowering people's confidence in IT, and as such it does cause damage."



WE'VE JUST EXPANDED YOUR CASE OPTIONS.

AOpen took one of nature's strongest designs, the Nautilus shell, as the inspiration for our range of cases. A range that is ever-expanding, from desktop to towers to our sturdy new server casings. If you would like more detail, please visit our web site at <http://www.servex.com.au>, e-mail ddeng@acer.com.au or contact our distributors listed below.

AOpen

servex
service for excellence

NSW: Advanced Customised Computer (02) 9692 9988 • Best Byte (02) 9436 0788 • Leading Pacific (02) 9713 9988 QLD: Compuworld (07) 3846 7588 • Intermedia (07) 3369 0477 Qld: IT (07) 4634 7999 VIC: Best Byte (03) 9561 8777 • Canda (03) 9574 9760 • Omega (03) 9800 3444 SA: Crest (08) 8299 0088 • Omega (08) 8410 3434 WA: Direct Memory Access (08) 9445 9500 • DAN Technology (08) 9443 6000 ACT: Select Approach (02) 6241 5633.

Servex Australia Pty Ltd ACN 076 483 808, AOpen is a registered trademark of AOpen Inc. All other product, brand and company names are trademarks of their respective owners. Servex 109

accusing Bill Gates of being a monopolist. The only real threat is the potential volume of email generated across networks. The same goes for Happy99.Worm, otherwise known as the Ska worm, which displays a 'new year fireworks display' and copies itself to all outgoing email and newsgroup messages by modifying part of Windows' TCP/IP stack, WSOCK32.DLL (the user does not need to be using a Microsoft email or newsgroup client in order to trigger the worm).

Trojan horses

A Trojan horse is a program that appears to execute a legitimate or harmless function, while secretly executing another. Modern antivirus products are tasked with removing these, in addition to true viruses.

Back Orifice 2000 is probably the most famous Trojan of the 1990s. It is part of an alleged 'network administration tool', which functions most often as a hacking device. If the Back Orifice 2000 Trojan is installed on your Windows 98 or NT system, anyone with the Back Orifice 2000 client software has full access to everything on your computer across a network (such as the Internet). The Trojan does not spread by itself — someone has to deliberately email it to you, potentially disguised as a friendly file.

A Trojan named Polyglot also appeared this year, under the guise of a Y2K update that appears to have been emailed from Microsoft. The program monitors email, but unless someone continues to send it around the Internet it should become rare.

BIOS killers

A golden rule of computer viruses used to be that they could not damage hardware, but this has also changed. PCs now ship with a 'flash BIOS', which means that the ROM chip containing the basic operating instructions can be upgraded using software from the manufacturer. Inevitably, virus writers have figured out how to flash garbage into the BIOS, rendering a computer unbootable until the BIOS chip is replaced (most motherboard manufacturers will send out a free replacement chip).

The first of this new breed of virus, Win95.CIH, is easy to find on the Internet. It has been mimicked by virus writers with a vendetta, such as the author of the Kriz virus. This virus tries to flash the BIOS on Christmas Day and displays an anti-Christian message. There is currently no protection against CIH-style viruses other than that offered by recent virus scanners. Motherboard manufacturers could do more to help by password-protecting the BIOS or only allowing it to be flashed after physically adjusting a DIP switch. It is not yet possible to damage other pieces of hardware, though it is theoretically possible to exploit other flash upgrades (such as video card BIOS) or attempt to cause so much disk activity that a hard drive's lifespan might be reduced. ■

Resources

Details on computer viruses affecting Australia can be found at:
http://www.symantec.com.au/region/reg_ap/avcenter/
<http://www.vet.com.au/html/vvcc/anti-virus/zoo/>

More technical information is available from Virus Bulletin, at <http://www.virusbtn.com/>.

The ability
to complete
more work
in less time
is in the palm
of your hand.



KENSINGTON®

Orbit™

*Everything you want and need
in a mouse, with the added
benefits of a trackball.*

Orbit is designed to use the natural motion of your fingers. The movement is smooth and precise - just point your cursor where you want it to go. And unlike a mouse, Orbit stays in one spot, saving you valuable desk space.

Orbit is designed to support the natural angle of your hand and wrist. So you work in a more natural and comfortable position. The more comfortable you are, the more productive you will be. Orbit fits both large and small hands and is perfect for both right and left handed users.



AVAILABLE FROM:

**Harvey Norman • Officeworks
• Corporate Express • Blue Star Office**

TRADE ENQUIRIES: Acco Australia 02 9700 0180

HAVE YOU
GOT TIRED
EYES, BLURRED

VISION OR HEADACHES?

3M™ Computer Filters

SCOTCHGARD
Protection™
for Easy Clean Surface

For sharper, clearer images and text. No matter how long you work at your computer, if you find yourself frequently squinting, getting headaches or experiencing eyestrain, a 3M™ Computer Filter may help.

3M™ Computer Filters offer an innovative range of filters designed to cater to all types of workstations.



3M™ Circular
Polarising Filters

3M™ Desktop
Privacy Filters

3M™ Notebook
Privacy Filters

3M™ Professional
& Executive Filters

3M™ Computer
Filter for the iMac

3M™ Expression
Filters

FREE 3M™ Precise Mousing Surface
when you buy any 3M Computer Filter

Complete and return this coupon to 3M with a barcode from your 3M™ Computer Filter and receive your Free 3M™ Precise Mousing Surface.

NAME _____
COMPANY _____
POSTAL ADDRESS _____
SUBURBTOWN _____ POSTCODE _____
EMAIL _____

Mail to: 3M Optical Systems Division,
950 Pacific Highway, Pyrmble NSW 2073.
Coupon must be accompanied with a barcode

For more information,
Telephone: 136 136 Facsimile: (02) 9498 9623

3M Innovation

COVER STORY

PCs under \$1,500	92
Editor's Choice	96
Specifications	98
Test results	100

PCs under \$3,000	102
Editor's Choice	107
Specifications	110
Test results	112

Ultimate PCs	114
Editor's Choice	118
Specifications	120
Test results	124

How we tested	96
---------------	----



PC SCORCHERS

The lead-up to Christmas is probably one of the better times of the year to buy a PC, as vendors eager for the Christmas dollar are sure to be offering bargains and discounts of one kind or another. Let's face it, this is the time to buy. Whether you want a PC for the company, the home office or for gaming, these reviews cover the lot.

This year APC looked at PCs in three categories. For the budget conscious APC requested PCs that cost below \$1,500. In the mid-range — not quite budget but not too expensive — a price ceiling of \$3,000 was set. Then there's the Ultimate category, where no limits were set on price or specifications. This last category is for the dreamers and for those who want it all, at any price.

The difference a year makes

In the past year, the PC market has done what it's always done from year to year: prices dropped, minimum specifications improved and PCs got faster. In this time, the innovatively named Intel Pentium III was released on the market, as was the equally imaginatively titled AMD K6-3. There was nothing incredibly new about either product line; both took another step in the processor's inexorable crawl towards greater and greater speed. The long-struggling Cyrix dropped out of the PC processor market altogether.

The most innovative processor to emerge

this year was the AMD Athlon. AMD's Athlon was more of an advancement in performance over its previous chips than the Intel Pentium III was over the Pentium II. In fact, the Athlon is proving to be a Pentium III beater. It finally brought some competition into the market, forcing Intel to drastically reduce prices in a bid to retain its market share. In this review, one quarter of the systems feature AMD processors. This year has seen a dramatic increase in the number of processor releases from both vendors, not just in clock speeds but also buses. This increase is not necessarily a good thing, as the PC you buy now is obsolete within about six weeks.

A more pressing issue, particularly in recent months, has been the wildly fluctuating price of SDRAM, which has been brought to the fore by the Taiwan earthquake in September.

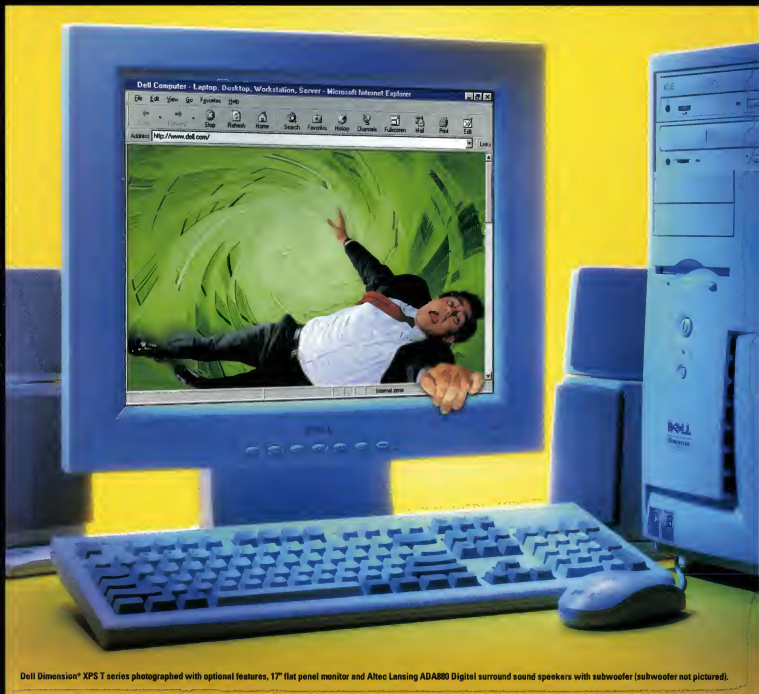
In 1999, 'PC integration' ceased to be a dirty word. Intel, having made major

blunders in the budget PC arena in the past — notably, concentrating on faster processors and totally missing the sub-\$US1,000 US market when it arose — has finally come to the budget rescue with the i810 chipset. With integrated audio and video, the 810-based motherboards have proven very popular with the manufacturers of budget systems. The audio may not be the best, but the video is capable and because they no longer require a graphics card or soundcard, the overall cost of the systems to consumers has fallen accordingly.

This past year has also seen the advent of the cheapest systems available — the 'free PC'. Like mobile phones, some vendors will sell you a PC with no upfront cost, provided you sign a contract with their approved ISP.

Finally, manufacturers have come to the realisation that beige boxes are boring. We have Apple's iMac success to thank for driving this point home. Of the 24 machines submitted for this review, five have attempted to break the bonds of the beige prison. Let's hope this is one trend that continues in the new year.

EXPERIENCE A NEW DIMENSION.



Dell Dimension® XPS T series photographed with optional features, 17" flat panel monitor and Altec Lansing ADA880 Digital surround sound speakers with subwoofer (subwoofer not pictured).

It's a whole new dimension in vision, sound, speed and Internet experience on the Dell Dimension® XPS T series. Build a staggering system with the fastest Intel® Pentium®III processors up to 700MHz, a monster 21" (v.i.s 19.8") Trinitron monitor and ultra high refresh rates for speed and realism. Or you can upgrade to a flat panel monitor for cutting edge technology that gives you clear, sharp images with less bulk and weight. Upgrade to a NVIDIA GeForce 256 AGP Graphics Card and Altec Lansing ADA880 digital surround sound speakers with subwoofers. Blow your mind with a system specifically designed for the rich graphics and booming sound of cutting edge 3D games and multimedia Web sites. The Dell Dimension®—it's a whole new dimension in cyber-experience.

Call Dell now on 1300 303 172 or visit our web store at www.dell.com.au for a closer experience of this new dimension.



DELL DIMENSION™ XPS T700R DESKTOP INTEL® PENTIUM® III PROCESSOR 700MHz

- Mini Tower Model
- 256KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 13.6GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 16MB 3DFX Voodoo 3000D AGP Graphics Card
- Turtle Beach Montage II 320Voice PCI Sound Card
- 48X Max Variable CD-ROM Drive
- Altex Lansing ACS-340 Speakers with Subwoofer
- 19" Colour Monitor (17.9" v.i.s.)
- Sony CD RW
- HP DeskJet 610C Colour Printer
- Microsoft® Intellimouse
- Microsoft® Windows® 98 Second Edition
- Microsoft® DEM Works Suite 99
- McAfee Virus Scan
- 3Com® US Robotics 56K PCI Voice Fax modem for Windows
- Dell QuietKey Keyboard
- 3-Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$4,499*
plus delivery

\$38 per week**

- Upgrade to:
- 2GB Ultra ATA Hard Drive \$243
 - Altex Lansing ADA-880 Speakers with Subwoofer \$234
 - 15" Flat Panel Monitor \$1,019

E-VALUE CODE 211120X-470311

DELL DIMENSION™ XPS T600R DESKTOP INTEL® PENTIUM® III PROCESSOR 600MHz

- Mini Tower Model
- 256KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 13.6GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 32MB NVIDIA TNT2 M64 2X AGP Graphics Card
- Turtle Beach Montage II 320Voice PCI Sound Card
- 48X Max Variable CD-ROM Drive
- Altex Lansing ACS-340 Speakers with Subwoofer
- 19" Colour Monitor (17.9" v.i.s.)
- Sony CD RW
- Microsoft® Intellimouse
- Microsoft® Windows® 98 Second Edition
- Microsoft® DEM Works Suite 99
- McAfee Virus Scan
- 3Com® US Robotics 56K PCI Voice Fax modem for Windows
- Dell QuietKey Keyboard
- HP DeskJet 610C Colour Printer
- HP ScanJet 3200C Scanner
- 3-Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$3,999*
plus delivery

\$33 per week**

- Upgrade to:
- 20 GB Ultra ATA Hard Drive \$150
 - Altex Lansing ADA-880 Speakers with Subwoofer \$234

E-VALUE CODE 211117X-470311

DELL DIMENSION™ XPS T500 DESKTOP INTEL® PENTIUM® III PROCESSOR 500MHz

- Mini Tower Model
- 512KB Integrated L2 Cache
- 128MB 100MHz SDRAM
- 13.6GB Ultra ATA Hard Drive (7200rpm)
- 3.5" 1.44MB Diskette Drive
- 16MB 3DFX Voodoo 3000D AGP Graphics Card
- SoundBlaster Live! Value 576 Voice Sound Card
- 6X Max Variable DVD-ROM Drive and Software Decoding
- Altex Lansing ACS-340 Speakers with Subwoofer
- 19" Colour Monitor (17.9" v.i.s.)
- Logitech 4-button MouseMan® Wheel (PS/2V)
- Microsoft® Windows® 98 Second Edition
- Microsoft® DEM Works Suite 99
- McAfee Virus Scan
- 3Com® US Robotics 56K PCI Voice Faxmodem for Windows
- Microsoft® Natural® Keyboard Pro
- 3 Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$3,379*
plus delivery

\$28 per week**

- Upgrade to:
- 20 GB Ultra ATA Hard Drive (7200rpm) \$112
 - 17" Trinitron Monitor (19" v.i.s.) \$1,019
 - Add Sony CD-RW with Formatted Media \$374

E-VALUE CODE 211118X-470311

DELL DIMENSION™ XPS T500 DESKTOP INTEL® PENTIUM® III PROCESSOR 500MHz

- Mini Tower Model
- 512KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 13.6GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 16MB 3DFX Voodoo 3000D AGP Graphics Card
- SoundBlaster Live! Value 576 Voice Sound Card
- 48X Max Variable CD-ROM Drive
- Harmon Kardon HK105 Speakers
- 17" Colour Monitor (15.9" v.i.s.)
- Logitech 4-button MouseMan® Wheel (PS/2)
- Sony CD RW
- Lexmark 1100 Colour JetPrinter
- Microsoft® Windows® 98 Second Edition
- Microsoft® DEM Works Suite 99
- McAfee Virus Scan
- 3Com® US Robotics 56K PCI Voice Faxmodem for Windows
- Microsoft Natural Keyboard Pro
- 3-Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$2,899*
plus delivery

\$24 per week**

- Upgrade to:
- 20 GB Ultra ATA Hard Drive \$150
 - Altex Lansing ACS340 Speakers with Subwoofer \$98

E-VALUE CODE 211112X-470311

DELL DIMENSION™ L466C DESKTOP INTEL® CELERON™ PROCESSOR 466MHz

- Micro Tower Model
- 128KB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 6.4GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- Integrated Direct AGP 4MB Dynamic Video Memory
- Creative Labs SoundBlaster 54 Voice PCI Sound Card
- 40X Max Variable CD-ROM Drive
- Harmon Kardon HK105 Speakers
- 17" Colour Monitor (15.9" v.i.s.)
- Logitech 4-button MouseMan® Wheel (PS/2)
- Lexmark 1100 Colour JetPrinter
- Microsoft® Windows® 98 Second Edition
- Microsoft® DEM Works Suite 99
- McAfee Virus Scan
- 3Com® US Robotics 56K PCI Voice Fax modem for Windows
- Dell QuietKey Keyboard
- 3-Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$1,999*
plus delivery

\$17 per week**

- Upgrade to:
- 13 GB Ultra ATA Hard Drive \$33
 - Altex Lansing ACS340 Speakers with Subwoofer \$98

E-VALUE CODE 211109X-470311

DELL DIMENSION™ L433C DESKTOP INTEL® CELERON™ PROCESSOR 433MHz

- Micro Tower Model
- 128KB Integrated L2 Cache
- 32MB 100MHz SDRAM
- 4.3GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- Integrated Direct AGP 4MB Dynamic Video Memory
- Creative Labs SoundBlaster 54 Voice PCI Sound Card
- 40X Max Variable CD-ROM Drive
- Harmon Kardon HK105 Speakers
- 15" Colour Monitor (13.7" v.i.s.)
- Microsoft® Intellimouse™
- Microsoft® Windows® 98 Second Edition
- Microsoft® DEM Works Suite 99
- McAfee Virus Scan
- 3Com® US Robotics 56K PCI Voice Faxmodem for Windows
- Dell QuietKey Keyboard
- 3 Year Limited Warranty
- Free Lifetime Telephone Technical Support

\$1,579*
plus delivery

\$13 per week**

- Upgrade to:
- 6.4GB Ultra ATA Hard Drive \$37
 - 17" Colour Monitor (19" v.i.s.) \$109
 - 6X Max Variable DVD-ROM Drive and Software Decoding \$84

E-VALUE CODE 211108X-470311

To order call today Mon to Fri 8am-8pm,
Sat 9am-3pm (EST)
In New Zealand call 0800 937 739*
for pricing and other information.



USE THE POWER OF
THE E-VALUE™ CODE.

MATCH OUR LATEST TECHNOLOGY WITH OUR
LATEST PRICES ENTER THE E-VALUE CODE
ONLINE AT WWW.DELL.COM.AU OR GIVE IT TO
YOUR SALES REP OVER THE PHONE.

1300 303 172

BUILD YOUR OWN AND ORDER ON-LINE

BE DIRECT™

DELL
www.dell.com.au

DELL'S NORMAL TERMS AND CONDITIONS APPLY AND ARE AVAILABLE ON REQUEST. PLEASE CALL OR REQUEST ON-LINE.

*Prices and specifications valid in Australia only, and subject to change without notice. All prices shown include tax but delivery is additional. Certain configurations cannot be changed. Dell, the Dell logo, and Dell Dimension, are registered trademarks of Dell Computer Corporation. The Intel Inside logo and Pentium are trademarks of Intel Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation. Other trademarks and trade names may be used in this document to refer to either the entities claiming marks and names or their products. Dell disclaims proprietary interest in the marks and the names of others. For Hard Drives GB means 1 billion bytes, total accessible capacity varies depending on operating environment (7.7k Min, 7.25k Min, 700k Min). All efforts will be made to check for errors in typography and photography; however, inadvertent errors may occur for which Dell may not be responsible. The colour of the Dell system shown in the picture is for advertising purposes only. Photographed with copyright. Intel Inside logo and Pentium are trademarks of Intel Corporation. All rights reserved. 1999 Dell Computer Corporation. All Rights reserved.

DELL019A/CAPR01

PCs under \$1,500

Last year, APC's budget category carried a price cap of \$2,000. This year the figure has dropped by \$500 and we still received some very good systems. Most of the vendors' prices come just below or on this price point, but Gateway was well below it. Our minimum specifications for this category were very simple: not only should the PC cost less than \$1,500, but it should also have Windows 98 installed and feature a minimum 64M of RAM. Last year the criteria were more lenient, allowing a minimum of 32M of RAM (although less than half of the systems submitted at the time came with such low specs.)

Last Christmas, you could net yourself a system with a 350MHz Pentium II or 300MHz K6-2 processor and 64M of RAM, which were not the most powerful machines by a long shot, but very good all the same. This year, our minimum machines boast more grunt and power than last year's Ultimate category. One thing that hasn't changed is the tiny monitors; for budget systems, 15in screens are the norm. Another trend to emerge this year is the 40x CD-ROM drive which comes standard with every system. The exception is the Adelong machine, which comes with a 6x DVD drive.

Half of the budget systems feature motherboards based on the Intel i810 chipset, and rely on this for both audio and video. Benchmark results placed the i810's graphics performance higher than some systems which relied on separate video cards, but this was not always the case. One thing APC looked at was whether the vendor had saved on supplying a separate video and soundcard, and if so, what had been included in the system to make up the price. Some vendors included a faster processor, a modem or good speakers, but others included no extras.

Adelong Everex Explora 450MHz

When APC sets a tight price limit for a PC review, it's always interesting to see how the vendors juggle the components to build the best system for the price. Most of the vendors used Intel Celeron processors and relied on the built-in graphics and sound processors on the motherboard of the Intel 810 chipset. Along with the THX Discovery, the Adelong Everex Explora 450 used a 450MHz AMD K6-2 processor, which is cheaper than the 500MHz Celeron that most of the other vendors used.

Adelong has used the price difference to add in some extras such as a DVD-ROM drive and a large (though not entirely useful) collection of software. The 6.4G hard disk drive and 64M of memory were standard among systems in this category. Adelong skimped on a few basic components such as the monitor, which was unimpressive, and the speakers, which weren't included at all.

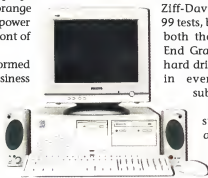
Several vendors in this review have tried to emulate Apple's PC-as-an-

appliance look. In Adelong's case, this means adding a shiny purple bit and a translucent orange thing (which looks like a power button but isn't) to the front of the PC.

The Explora 450 performed well in the Ziff-Davis Business and High-End Disk Winmark tests, and its 2D graphics performance was average. However, it performed badly in all the other tests, which indicates a rather underpowered system.

Overall, Adelong's balance of components and poor performance add up to a system that fails to provide good value. **Josh Mehlman**

Distributor	Adelong
Phone	(02) 8344 3190
Online	http://www.adelong.com.au/
Price	\$1,495
In short	Underpowered and a poor choice of components.



Graphically, the Alpha was strong in the Half-Life timedemo and Ziff-Davis Business Winstone 99 tests, but dropped away with both the Business and High-End Graphics WinMarks. The hard drive scored number one in every test by a very substantial margin.

Of course, there are swings and roundabouts with PC specs. Although you win with the graphics and hard drive power, you lose out in sound quality. The Alpha Celeron 500 sports an older ISA soundcard, which is quite capable but behind the times. The tiny multimedia speakers are adequate for their purpose, but don't throw out your hi-fi just yet.

The monitor is the ubiquitous 15in affair, and was incapable of handling a refresh rate greater than 75Hz. All of our tests had to therefore be run at this lower refresh rate. At this speed the desktop is aesthetically dull, but for the corporate world where a dull desktop is a bonus, the Alpha Celeron 500 should easily find a niche.

Darren Ellis

Alpha Computers Celeron 500

Out of the two sub-\$1,500 machines to have a Celeron 500MHz processor and 64M of SDRAM (the other is the Pioneer Value C500), this Alpha machine does not follow the 'Intel's 810 integrated chipset is great' model of PC design. If it did, it may have cost less, but it still manages to pack a decent video card and hard drive into its beige box and remain below the \$1,500 price point.

Distributor	Alpha Computers
Phone	(03) 9415 9177
Online	http://www.alpha.computer.com.au/
Price	\$1,499
In short	Enough excitement for the home enthusiast on a budget, but also great for the business sector.



Intel takes you to the edge of network technology



WAN Solution Package:
Intel® Express 9510 Router
Shiva VPN Express
Shiva VPN Client
Save over \$1,400*

LAN Solution Package:
Intel® 460T Switch (24-port)
Intel® Netport Express™ 10/100 Pro/100 Management Adapter (3-port)
Intel® PRO/100+ Management Adapter (25 pins)
Save over \$1,200*

Innovative solutions for the Internet economy.

From WAN to LAN solutions, Intel offers a complete range of networking products to meet your Internet challenges with a special offer to end all cost anxieties. This is our latest way to help you enhance your ever-changing and growing business. To keep up with your company's network demand, take advantage of our dynamic promotion valid from **September 8 to December 31, 1999**. Along with the WAN and LAN Solutions, we are also offering great savings on:

- Shiva LanRover D56 (24 modem port) + Intel® Express 460T Switch (24 port) + Intel® PRO/100+ Management Adapter (25pins) – **save over \$11,000***
 - Intel® PRO/100+ Management Adapter** – **save over \$50.***
- To check out these special promotions at your nearest reseller, call 1800 818 106 or visit our website for more product information.

► www.intel.com/apac/network

intel®

© 1999 Intel Corporation. All rights reserved. Intel is a registered trademark and Netport Express is a trademark of Intel Corporation. All other brands and trade names are properties of respective owners. Intel reserves the right to change the terms of the promotions without prior notice. *All featured price savings are based on manufacturer suggested retail pricing including tax, subject to change based on reseller quotation. ** From bulk packs only. ESD130A/V1

Beyond Computers SuperO C Class

Intel's i810 chipset is a boon for cheap PCs, as it means either a lower price or better extras. The SuperO C Class has neither unfortunately, but this is not to say that it should be dismissed completely. The integrated graphics card netted it second place in the Ziff-Davis Business and High-End Graphics WinMark tests and it was equal first with the Alpha Celeron 500 for the Business



Winstone 99 test—no mean feat when one-third of the low-end systems were unable to even run it.

In the Viewperf tests, it rated highly (third position) and was only a few frames per second (fps) behind the leader in our Half-Life timedemo test. The same can be said for the 3DMark 99 results. The hard drive was not the fastest in our tests, but still speedy enough to cope with most heavy use. The CPUmark 99 and FPU WinMark 99 results were not far behind the two faster Celeron-equipped machines and higher than the two 450MHz K6-2 systems.

The 15in LG monitor is good looking and easy to use. The bundled speakers are not the greatest we've seen or heard, but are able to pass muster. All up, these results indicate a great system for gamers or home enthusiasts, but it's also well suited for the corporate market.

Darren Ellis

Distributor	Beyond Computer
Phone	(02) 9648 0888
Online	http://www.beyondcomputers.com.au/
Price	\$1,499
In short	Not a bad system; fairly bland on the outside but better under the hood.

Gateway Neo

Through some twist of fate, the Gateway Neo ended up sitting next to the Apple iMac in APC Labs, which allowed us to see how

derivative Gateway's design is. The Neo even has a handle on the top, but unlike the iMac, the Neo is so heavy you couldn't possibly lift it with the handle. Where Apple's design is sleek and elegant, Gateway's is rather bulky and cumbersome. Neo's built-in 15in monitor is pleasant to look at, but the integrated speakers sound a little tinny and lack bass power.

Gateway's all-in-one Neo is targeted at the same novice consumers as the Apple iMac. Neo requires very little effort to set up; just plug in the power, keyboard, mouse and phone line, and you're away. Gateway has added several features to make the operating system a little easier to use. The desktop has shortcuts to help you set up a connection to Gateway's Internet service, and to a user-friendly help system that guides you through the basics of using the computer.

Once you buy a Neo, you're stuck with it; you can't even upgrade the memory from 64M or swap the CD-ROM drive for a DVD drive. The specifications are rather basic, and the 4.3G hard disk drive is perhaps a little small by current standards. On the other hand, \$1,299 is not a lot to pay for an entire system.



Given it has the slowest processor in this category (a 400MHz Celeron) its mediocre performance was hardly surprising, although it came out ahead of the AMD-based Adelong and THX systems in the 3D graphics tests. It would perform adequately as a home system for word processing, email and Web surfing, but it's not the best choice for multimedia and games. The retail version has a slightly different finish to the system pictured above.

Josh Mehlman

Distributor	Gateway
Phone	1800 500 742

Online
Price
In short

http://www.gw2k.com.au/
\$1,299
Inexpensive all-in-one for the home.

Pioneer Value C500

You can't really get more down-to-earth or no-frills than this system. Aside from the speedy Celeron processor, it goes for the bare minimum specifications. Of the two sub-\$1,500 systems that feature a 500MHz Celeron processor, the Pioneer Value C500 was the speedier performer. Relying on the i810 chipset to deliver both sound and graphics, the system scored rather well in our tests.



It was tops in the Ziff-Davis Business and High-End Graphics WinMark tests, closely followed by the Beyond machine, which also used the Intel i752 graphics chip. It achieved good frame rates in Half-Life timedemo and a high score in 3DMark 99. The system topped the CPUmark 99 and FPU WinMark 99 tests, edging out the Beyond system by the tiniest margin. Its hard drive fared better in the Business Disk WinMark 99, ranking second, but last under the High-End test by a large margin. This with the 15in Mitsubishi monitor, which we liked, makes a good visual combination. The sound is bit of a let-down, however—the speakers are primitive.

Because the Pioneer Value C500's primary focus is squeezing the best performance out of its constituent parts, the aesthetics and ease of use have been neglected. The keyboard and mouse, the two input devices you'll use the most, are uncomfortable to use.

Darren Ellis

Distributor	Pioneer
Phone	(02) 9260 2888
Online	http://www.pioneercomputers.com.au/
Price	\$1,499
In short	Not much to look at, but good performance.

Grow your network, shrink your budget

Integrated VPN and Direct Dial Solution

Shiva LanRover™ VPN Gateway™
Shiva VPN Client
Shiva Access Manager 5.0
Shiva LanRover™ E/PLUS

Save up to \$13,000*



Branch Office Solution

Intel Express 8100 Router
Intel Express 4100 Switch (24 port)
Intel NetPortExpress™ Print Server (3 port)

Save over \$500*

Build your network and save up to \$13,000

Intel network products are designed to be the building blocks of the Internet to meet the demand from e-commerce, increase traffic through the Internet, increase mission-critical applications, and more. From integrated VPN and direct dial in WAN space to LAN solutions, Intel offers a complete range of networking products to meet your Internet challenges. We are now offering a second series of bundle promotions to enhance your ever-changing and growing business. Don't miss out on our dynamic promotion valid from **October 4 to January 31, 2000.**

Along with these solutions, we are also offering great savings on:

- Intel® Express 510T Switch (24 port) + Intel® Express 9510 Router + Intel® PRO/100+ Management Adapter (25 pcs)**
— **save over \$700***
- Upgrade from SAM x.x to SAM 5.0
— **save up to \$600***
- Intel® PRO/100+ Management Adapter**
— **save \$50***

► www.intel.com/apac/network

intel®

THX Discovery

Like Adelong, THX opted for a cheaper 450MHz AMD K6-2 processor rather than a more expensive 500MHz Intel Celeron. This allowed THX to spend a little more on some of the other components such as the graphics card, soundcard and speakers. The rest of the configuration — 64M of memory, 6.4G hard disk drive and 15in monitor — is standard for this category.

THX's trade-off didn't work well, owing to the relatively poor performance of the K6-2 processor. AMD's K6-2 is renowned for its poor floating-point performance, which helps to explain why the THX Discovery was down at the bottom of the 3D graphics pile, along with the other AMD-based system. The THX performed very poorly in the Viewperf tests, which measures 3D performance under OpenGL. The Matrox



Millennium G200 is renowned for being particularly bad under OpenGL.

Aside from an average score in the Ziff-Davis High-End Disk WinMark test, the THX scored very poorly in all the tests, coming close to the bottom in the processor, disk and 2D graphics tests. We were not able to run the Business Winstone test on this PC, but chances are it wouldn't have been good news either.

THX included some rather nifty features. Similar to much more expensive systems like the IBM Aptiva GOA, the THX's keyboard has a full range of CD player and audio control buttons, as well as a few programmable buttons for launching your favourite applications.

Josh Mehlman

Distributor	THX
Phone	(02) 9262 1588
Online	N/A
Price	\$1,495
In short	Poor performer.

Editor's Choice



Alpha Celeron 500

Highly commended Beyond Computers SuperO C Class

Neither of these systems are the best looking units available, but the no-frills aesthetics hide some good performance. Although the Alpha Celeron 500 was not the most robust of PCs when it comes to 2D graphics, it aced the Half-Life timedemo, was tops for most of the Viewperf tests and came first for the Business Winstone 99 benchmark and both of the hard drive tests.

The Beyond PC is one of the few Intel i810 based machines to have some good extra components included for the price. Both of these systems are great for gamers, but are equally suited to the business desktop as well. They both offer something for everyone at an affordable price.

How we tested

To test the performance of the computers submitted for review, APC Labs used a mixture of the Ziff-Davis suite of benchmark software, Futuremark's 3DMark 99 Max, plus SPEC's Viewperf and Half-Life's timedemo.

Winstone 99 runs a suite of modern business and graphics applications. These applications are timed to measure the length of time the system takes to complete these tasks. The Business Winstone result is a comparative score of how fast the computer could complete the various business applications.

WinBench 99 contains a set of subtests, each designed to find out how fast each component of a PC really is.

Business and High-End Graphics WinMark 99 measure the system's graphics performance when performing video tasks associated with common business applications, as well as demanding multimedia and 3D applications.

Business and High-End Disk WinMark 99 provides a measure of how a system's hard disk subsystem handles a load equivalent to that demanded by the business applications used in the Business Winstone 99 test.

CPUMark 99 compares the speeds of the processor, memory and cache subsystems.

FPU WinMark 99 is a 32-bit floating-point processor test.

3DMark 99 Max tests 3D acceleration in a 'real world' environment. These tests are designed to ape the conditions posed by games and applications.

In the same way that Graphics WinBench profiles the GDI calls made by the applications, SPEC's **Viewperf** profiles OpenGL calls made by a set of workstation applications to test the 3D graphics capabilities of a system. It extracts the OpenGL instructions delivered by applications during the run of a script, and repeats those instructions without any other application overhead.

Its standard run consists of five applications (Viewsets). These are: Advanced Visualiser (AWadv5-03), DesignReview (DRV-06), Data Explorer (DX-05), Lightscape (Light-03) and ProCDRS-02. The results are a weighted frame rate achieved in each viewset.

Viewperf, it should be noted, is more a test of the geometry capabilities of a system than a rendering test — unlike current games, which focus on rendering and don't

have high geometry demands. In most circumstances, it is a better test of the system processor than of the graphics card, unless, like the GeForce 256, the graphics card has a geometry engine on board.

Our final test involved running a timedemo in Half-Life, a 3D game from Sierra. This demo was run at 800 by 600dpi (if the card was capable) with the appropriate rendering driver; either the 3dfx mini driver in OpenGL, the card's own OpenGL driver or Direct3D. This tested the card's frames per second (fps) running the game full screen.

All the systems tested were shipping versions available to the general public at the time of publication, unless otherwise stated. Please note that because of the lead time between testing the machines and publication, some specifications and pricing may have changed. Be sure to check this information with the vendor before purchase.

These tests were performed without independent verification by Ziff-Davis, and Ziff-Davis makes no representation or warranties as to the results. WinBench is a registered trademark of the Ziff-Davis Publishing Company.

**IF YOUR HEART ISN'T RACING BY NOW,
CHECK TO SEE IF IT'S BEATING AT ALL.**



New for 2000

30 terrain in 16-bit color
12 high-res cities
12 aircraft
Mach 2 Concorde
Boeing 777-300
Raytheon Beech King Air 350
Mooney Bravo
Exclusive Jeppesen NavData database
Global Positioning System
Graphical flight planner
Real-time moving map
New IFR training panels
Downloadable weather updates
Flight dynamics editor
Instrument panel editor
Interactive lessons by Rod Machado
200-page pilot's handbook
Optimized for Pentium III Processor



Experience visually rich 3-D scenery



Download real-time weather conditions



Land in 20,000 worldwide airports



www.microsoft.com/games/fsim



**Bell Helicopter
TEXTRON**



FlightSafety



**ROMANIAN
AEROSPACE**



**Microsoft
Gaming
ZONE**

Microsoft

SPECIFICATIONS: PCs UNDER \$1,500

Product	Everex Explora 450	Celeron 500	SuperO C Class
Distributor	Adelong	Alpha Computers	Beyond Computers
Phone	(02) 8344 3190	(03) 9415 9177	(02) 9648 0888
Online	http://www.adelong.com.au/	http://www.alphacomputer.com.au/	http://beyondcomputers.com.au/
Price	\$1,495	\$1,499	\$1,499
Processor	AMD K6-2 450MHz	Intel Celeron 500MHz	Intel Celeron 466MHz
Secondary cache	512K	128K	128K
Tested/maximum RAM and type	64M SDRAM (512M max)	64M SDRAM (768M max)	64M SDRAM (512M max)
Hard disk	6.4G Maxtor	6.4G Quantum	6.4G Quantum Fireball CX
Hard disk controller	Via Bus Master PCI IDE	Intel 82371A8/E8 PCI Bus Master IDE	Intel 82801AA Bus Master IDE
Hard disk file system	FAT32	FAT32	FAT32
Graphics card	Trident CyberBlade	nVidia Vanta 128	Intel 810 chipset
Video bus type	AGP	AGP	AGP
Video RAM	8M SGRAM	8M SGRAM	4M plus system RAM
Video controller chip	Trident	nVidia TNT2 Vanta	Intel 810 chipset
Graphics driver name and version	4.11.01.2182	4.11.01.0109	4.11.01.1272
Monitor	15in Philips	15in Philips	15in LG
Tested resolution/colour depth/refresh rate	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/75Hz	1,024 by 768/16-bit/85Hz
CD-ROM/DVD drive	6x DVD	40x CD-ROM	40x CD-ROM
Soundcard	Integrated PCI card	Sound Blaster Vibra 128 PCI	Intel 810 chipset
Speakers	N/A	120W CDSOINIC	480W hi-fi speakers
Modem	56K internal	N/A	N/A
OS available	Windows 98	Windows 95/98/NT, Linux, OS/2	Windows 98
Warranty	2 years RTB	2 years RTB parts and labour	3 years limited
Bundled software and accessories	Lotus SmartSuite, Notes 5 Client, IBM Perfect Photo, Norton AntiVirus, WinFax Pro, PowerDVD	N/A	N/A

Product	Neo	Value C500	Discovery
Distributor	Gateway	Pioneer	THX Computer Systems
Phone	1800 500 742	(02) 9690 2888	(02) 9262 1588
Online	http://www.gw2k.com.au/	http://www.pioneercomputers.com.au/	N/A
Price	\$1,299	\$1,499	\$1,495
Processor	Intel Celeron 400MHz	Intel Celeron 500MHz	AMD K6-2 450MHz
Secondary cache	128K	128K	512K
Tested/maximum RAM and type	64M SDRAM (one memory slot, not user serviceable)	64M SDRAM (512M max)	64M SDRAM (768M max)
Hard disk	4.3G Quantum Ultra ATA	6.4G Quantum Fireball	6.4G Quantum Fireball CX
Hard disk controller	Intel 82801AA Bus Master IDE	Intel 82801AA Bus Master IDE	All M5229 PCI Bus Master IDE
Hard disk file system	FAT32	FAT32	FAT32
Graphics card	Intel 810 chipset	Intel 810 chipset	Matrox Millennium G200
Video bus type	AGP	AGP	AGP
Video RAM	4M plus system RAM	4M plus system RAM	8M SDRAM
Video controller chip	Intel 810 chipset	Intel 810 chipset	Matrox Millennium G200
Graphics driver name and version	4.11.01.1321	4.11.01.1161 Ver PV1.0	4.11.01.4330
Monitor	15in Philips	15in Mitsubishi	15in Mitsubishi
Tested resolution/colour depth/refresh rate	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz
CD-ROM/DVD drive	40x CD-ROM	40x CD-ROM	40x CD-ROM
Soundcard	Intel 810 chipset	Intel 810 chipset	Sound Blaster 128 PCI
Speakers	Integrated speakers	120W speakers	CS-280 300W speakers
Modem	56K integrated on 810 chipset	N/A	56K internal
OS available	Windows 98	Windows 98	Windows 98
Warranty	1 year RTB parts and labour	2 years parts, 5 years labour	1 year RTB
Bundled software and accessories	MS Works Suite 99	N/A	Lotus SmartSuite, World Book Encyclopedia

Getting Microsoft or Cisco Certified is now...

Achieving Microsoft or Cisco Certification places you among the elite and secures your future in IT. If you have one year's experience, we can put you on the fast track...

faster...

Time is money. So we've created a unique training system that helps you or your staff learn all that's needed in a fraction of the time.

easier...

You won't waste any time or money. We keep things simple: making sure that you pass *and* pick up the skills you need to solve on the job challenges.

safer!

We're so confident that you'll pass, we will pay for any re-tests until you do, or we will give you your money back!
Work smarter, not harder.
It's the Ultimate difference.

Call 1800 999 518 or
email: info@uct.com.au



- Sydney • Melbourne • Brisbane
- Corporate On-Site Training Available Nationwide

MW/UCGt64319 APC





Test results: PCs under \$1,500

Product Business Winstone 99

Alpha Celeron 500	21.1
Beyond SuperO C Class	21.1
Pioneer Value C500	20.1
Gateway Neo	16.2
Adelong Everex Explora 450	Unable to run
THX Discovery	Unable to run

Product High-End Disk WinMark

Alpha Celeron 500	11,000
Adelong Everex Explora 450	8,160
Gateway Neo	7,740
THX Discovery	7,530
Beyond SuperO C Class	7,430
Pioneer Value C500	7,220

Product Viewperf Advanced Visualiser

Pioneer Value C500	11.15
Beyond SuperO C Class	10.5
Alpha Celeron 500	10.49
Gateway Neo	8.86
Adelong Everex Explora 450	4.53
THX Discovery	1.96

Product CPUmark99

Pioneer Value C500	35.8
Alpha Celeron 500	34.7
Beyond SuperO C Class	33.9
Gateway Neo	29.2
Adelong Everex Explora 450	23.5
THX Discovery	20.8

Product Business Disk WinMark

Alpha Celeron 500	3,230
Pioneer Value C500	2,800
Adelong Everex Explora 450	2,510
Beyond SuperO C Class	2,470
THX Discovery	2,470
Gateway Neo	2,110

Product Viewperf Data Explorer

Alpha Celeron 500	9.72
Pioneer Value C500	5.06
Beyond SuperO C Class	4.75
Gateway Neo	4.09
Adelong Everex Explora 450	2.24
THX Discovery	1.73

Product 3DMark 99 MAX

Alpha Celeron 500	3,427
Pioneer Value C500	2,803
Beyond SuperO C Class	2,761
Gateway Neo	2,246
THX Discovery	1,400
Adelong Everex Explora 450	857

Product Business Graphics WinMark

Pioneer Value C500	144
Beyond SuperO C Class	139
Adelong Everex Explora 450	115
Gateway Neo	98.8
THX Discovery	98.2
Alpha Celeron 500	79.7

Product Viewperf Lightscape

Alpha Celeron 500	1.18
Pioneer Value C500	1.06
Beyond SuperO C Class	1
Gateway Neo	0.86
Adelong Everex Explora 450	0.36
THX Discovery	0.28

Product FPU WinMark 99

Pioneer Value C500	2,680
Alpha Celeron 500	2,650
Beyond SuperO C Class	2,500
Gateway Neo	2,110
Adelong Everex Explora 450	1,490
THX Discovery	1,420

Product High-End Graphics WinMark

Pioneer Value C500	413
Beyond SuperO C Class	385
Alpha Celeron 500	378
Adelong Everex Explora 450	376
THX Discovery	355
Gateway Neo	334

Product Viewperf DesignReview

Alpha Celeron 500	5.91
Pioneer Value C500	5.57
Beyond SuperO C Class	5.26
Gateway Neo	4.53
Adelong Everex Explora 450	2.06
THX Discovery	0

Product Half-Life timedemo

Alpha Celeron 500	26
Pioneer Value C500	24
Beyond SuperO C Class	23.3
Gateway Neo	18
THX Discovery	13.8
Adelong Everex Explora 450	11.1

SONY.



For perfect 21/21 vision.

3
YEAR
ON-SITE
WARRANTY

From the inventor of Trinitron television technology comes another world first. FD Trinitron flat screen computer monitors. Ranging up to 21 inches in size, each screen boasts unique vertical and horizontal flatness to enhance picture resolution and minimise ambient light reflection. In short, they're another great reason to take the Sony advantage. Improve your vision by visiting www.sony.com.au or calling 1 800 226 429. **It's a Sony.**

E100 - 15"



E200 - 17"



G400 - 19"



G500 - 21"



PCs under \$3,000

It's a little hard to compare many of these systems with those in last year's review as APC only used two categories in 1998. However, some of the Ultimate systems were about the \$3,000 to \$3,500 price point and should make for a general comparison. Again, our specifications for this category were not the most stringent—all that was needed was a system with Windows 98, a CD-ROM and a price of between \$1,500 and \$3,000.

We received less of a cross-section of machines for this category than the budget bunch—most were Intel-based systems, except for the Adelong Athlon machine and, obviously, the Apple

iMac. It is interesting to note that three of the machines came with 64M of RAM and not the 128M featured by the rest, which is becoming the new industry standard.

Half of the machines had DVD drives installed. Most telling is the fact that *none* of the systems with DVD drives, in all three categories, came with hardware DVD decoder cards. All rely on soft-DVD decoders of one form or another. The reason for this is simple: a DVD decoder card adds a hundred dollars or more onto the cost of a system without giving any speed benefits. The downside to this cost saving is that not all of the machines were capable of running

soft-DVD smoothly in full-screen mode. Buyers beware.

Datawell was the only vendor last year to submit a system at the \$3,000 price point. That machine came with a Pentium II 400MHz processor, 64M of SDRAM, a 4.5G hard drive, an Intel i752 graphics card and a 15in monitor. This year, you're looking at a lot more bang for your buck. The processor clock speeds have increased (aside from the iMac's 400MHz G3), the RAM has either doubled or quadrupled, the hard drives are up to three times larger, and only four of the systems have 15in monitors. Next year should hopefully see a similar increase in specs.

Adelong Athlon PC 550MHz

As the only system under \$3,000 without an Intel processor, the Adelong Athlon PC 550MHz system is a perfect example of why Intel has been concerned about AMD's re-emergence on the market as a serious contender. It's also one of three machines in this category to have only 64M of RAM.

It features a Matrox Millennium G400 Max card, which when tested by APC (see APC August 1999, page 124) was a clear winner. Here it also topped the Ziff-Davis Business Graphics WinMark 99 and the High-End Graphics WinMark 99 tests. Its score was average, but achieved more than enough of a frame rate in Half-Life to satiate the pickiest of gamers.

The Athlon chip held its own against the faster Pentium III machines, winning by a clear margin in the CPUmark 99 and not far behind the 600MHz Pentium III systems (both with double the RAM) in the FPU WinMark 99 test. The hard drive was not quite up there with the faster drives, but at 13G you can't really complain.

This is a great machine for the gamer or home enthusiast. The Diamond Monster MX300 soundcard and Altec Lansing speakers offer superb audio. The

DVD drive is good value for money, unlike the software player. When we ran a DVD movie full screen, it was slightly (and only slightly) jerky. For the extra money, pop in a hardware DVD decoder card and round off what is a great system.

Darren Ellis

Distributor

Phone

Online

Price

In short

Adelong

(02) 8344 3190

<http://www.adelong.com.au/>

\$2,945

Good specs, good results, good system.



Alpha Computer PIII-550

Alpha's PIII-550 has a distinct no-frills feel to it. By putting its eggs in the performance basket Alpha neglected some of the less tangible, more experiential aspects of the system, such as audio.

Alpha splurged on storage, installing a large and relatively expensive 18G Ultra ATA/66 IBM hard disk drive. Not only was this the largest hard disk drive in the sub-\$3,000 category by far, it was also clearly the strongest performer, blitting the competition in the Ziff-Davis Business and High-End Disk WinMark tests. Not surprisingly, this led to a top score in Business Winstone 99, which relies heavily on disk performance.

Alpha chose a reasonably speedy 550MHz Pentium III processor, although two systems in this category managed a top-of-the-range 600MHz Pentium III. Alpha backed this up with 128M of memory, as did most vendors here.

For graphics grunt, Alpha selected an

nVidia Riva TNT2 graphics card with 32M of VRAM, which is the middle of the TNT2 range. This combination worked very well; the Alpha scored very highly in all the graphics tests. It grabbed second place in both Business and High-End Graphics WinMark, came second in 3DMark 99 and placed first in two of the four Viewperf tests.

Alpha chose a rather poor combination of soundcard and speakers, so the audio quality wasn't the best. Alpha also included a CD-ROM drive, when a DVD drive might have been more appropriate.

Josh Mehlman

Distributor

Phone

Online

Price

In short

Alpha Computer

(03) 9415 9177

<http://www.alphacomputer.com.au/>

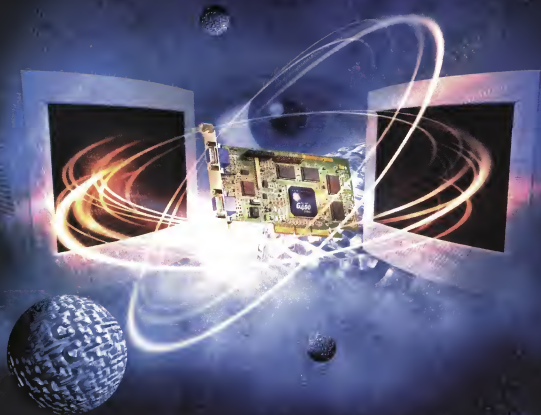
\$2,999

It goes, it goes, it just goes.



Apple iMac DV Special Edition

The success of the iMac in the past year has put Apple back on the map and made



Dramatically Different

The new Millennium G400 series High Performance Video Cards

The Fastest

- Explosive 3D, 2D and DVD performance
- The only 256-bit DualBus graphics chip
- Fast AGP acceleration and 16 or 32MB of memory

The Sharpest

- True Environment Mapped Bump Mapping for maximum 3D realism
- Vibrant Color Quality2 32-bit rendering, texturing and Z-buffering
- 300 or 360 MHz UltraSharp DAC for flicker-free displays

The Most Versatile

- Unique DualHead Display supports two independent monitors with one AGP card
- The only card to support 8 combinations of RGB, TV and Flat Panel monitors
- Upgradeable with MJPEG video editing and Digital Flat Panel

In Australia: Top PC Magazines choose Matrox G400



Editor's Choice
apcmag



pc world
BEST BUY

Internationally: G400 Wins Over 100 Press Awards



Australian Distributor
Focal Point Computing Pty Ltd
021 0372 6600

www.matrox.com/mga

matrox

the world rethink PCs. Apple has followed up the original iMac with three new models.



We looked at the top model, the iMac DV Special Edition. Both the DV and DV Special Edition models have a 400MHz PowerPC G3 processor and a trayless DVD-ROM drive. The Special Edition model also has 128M of memory rather than 64M, and a larger hard disk drive.

Apple tweaked the physical look and feel of the iMac, removing a lot of the chassis surrounding the monitor, so you can now see right inside the system. The panel on the side which covered all the connectors has been removed, so now all your peripherals plug straight into the side of the system.

In terms of specifications, the iMac compares favourably to the other PCs in this feature. Its memory and hard disk are on par with the higher-end systems we reviewed. Don't be fooled by the clock speed either. Since it's an entirely different processor and operating system, you can't compare performance strictly by clock speed. Unfortunately, there isn't any easy way to compare Macs and PCs head to head. Apple's hysterical benchmark claims aside, we think the iMac will perform as well as almost all the systems in this category. The only area it falls down in is graphics — APC's previous tests have shown the ATI Rage 128 to be inferior to the TNT2 and Voodoo3 chips that most of the systems in this category have.

Josh Mehlman

Distributor	Apple
Phone	13 36 22
Online	http://www.apple.com.au/
Price	\$2,999
In short	Fantastic design, and a

Beyond Computers SuperO P Class

This machine features the 600MHz Pentium III chip — the fastest available at the time of review. Only one other system in this category, the Pioneer 2000 SOHO Pentium III, had this chip. The Pioneer edged it out on the Ziff-Davis CPUmark 99 test (both were behind the slower 550MHz Athlon system from Adelong) but it came first in the FPU WinMark 99 test. Both machines also scored highly in the Business Winstone 99 test.

You can't really fault the hard drive or graphics subsystems on this machine. Although its hard drive results are far from perfect, it's nonetheless robust and speedy. The graphics are excellent — the results from the WinFast S320 TNT2 Ultra card were high for the Ziff-Davis tests, at the top end of the 3DMark 99 tests and the same for the Half-Life frame rate tests. It rated very highly with Viewperf, which is a bonus for OpenGL gamers.



This system has some great components, but not the requisite output devices. The two most glaring examples of this are the graphics and audio. It's a pity the speakers are inferior — the Diamond Monster Sound MX300 soundcard deserves so much more. It's also a shame about the 15in monitor; 70% of vendors in this category favoured either 17 or 19in models.

Darren Ellis

Distributor	Beyond Computers
Phone	(02) 9648 0888
Online	http://www.beyondcomputers.com.au/
Price	\$2,999
In short	This is a great machine for the hardcore gamer, let down by

BlueFire ChromeStation 500T

Overpriced systems are something we're used to from big-name vendors. But when a small vendor like BlueFire sends us an overpriced system for review, we have to wonder what it was thinking.

BlueFire's ChromeStation 500T looks reasonable to begin with. It has a 500MHz Intel Pentium III processor and 128M of memory. The 500MHz processor isn't the fastest in this category, but it isn't the slowest either, and the majority of the systems under \$3,000 have 128M of RAM. The 8.4G hard disk drive is probably enough for most purposes, but is on the smaller end of the scale for this category.



So far, so good, until BlueFire chose to use the Intel 810 chipset's integrated graphics and sound processors rather than include separate graphics and soundcards.

This is a solution more frequently seen in budget systems because its performance in graphics is reasonable but far from exciting. BlueFire also sided with the 50% of vendors that included a CD-ROM drive rather than a DVD drive.

What this adds up to is a system that is left behind in the performance stakes with almost no redeeming features. The ChromeStation lingered near the bottom of the performance tests with very few exceptions, and appeared to be most comfortable in third-last position.

BlueFire included a few nice extras, such as Labtec speakers, that sound almost as good as the Altec Lansing and Boston Acoustics speakers that came with the Dell and Gateway systems respectively. However, this did not justify the poor performance and minimalist specs.

Josh Mehlman

Distributor	BlueFire
Phone	(02) 9439 4394
Online	http://www.bluefire.com.au/
Price	\$2,999
In short	Overpriced or underfeatured,



PROBLEM: Do you ever have trouble getting your cursor to go where you point with your mouse?

ANSWER: Improve the grip between your mousing surface and mouse ball by keeping your mouse cleaner.

SOLUTION:

3M™ Precise™ Mousing Surface

Go precisely where you point. The 3M™ Precise™ Mousing Surface virtually eliminates slippage, improves grip and traction of your mouse ball by keeping it cleaner.

The advanced micro-groove surface structure traps dust particles in the valleys while the mouse ball rides along the peaks, away from the dirt. The result is smoother, more accurate mousing.



Other foam mouse pads



3M™ Precise™ Mousing Surface

For information on your nearest retailer contact 136 136

3M Office Products Division
3M Australia Pty Limited
ACN 000 100 096
950 Pacific Highway
Pymble NSW 2073
3MAOFFR0219 10/99

3M Innovation

ComfortView Professional

APC was divided over the casing of this system. The sleek, rounded plastic door that hides all the switches, lights and drives away was seen as either ridiculous looking or a fashionable idea. But when did looking silly ever stop a PC vendor? Looked at an iMac lately? The final consensus was that although it doesn't fit on the desktop, it would blend in well with the hi-fi, VCR and TV if you are going to use the system as a home machine.

At first glance on the results tables (page 112) it languishes near the bottom of every test. Then again, it also has a



mere 64M of RAM and a Pentium III 450MHz processor (equal slowest with the IBM Aptiva GOA), so the results aren't as disparaging as they seem. All in all, the test results reflect what you'd expect from a system with this configuration.

The 19in Auriga monitor is great. The screen is crisp and it has one of the friendliest OSDs (onscreen displays) that we've seen. No other vendor in this category opted to include such a large screen, and the system was more than a hundred dollars below our price ceiling. This system has one of the strangest inclusions of any machine we have ever reviewed — force feedback headphones. These headphones pulse and thump away on your head in time to the music. Strange, but novel.

Darren Ellis

Distributor	ComfortView
Phone	(03) 9543 6811
Online	N/A
Price	\$2,880
In short	Not a bad system, but maybe a little rich. Great monitor.

systems in this category had 600MHz processors, and 128M of RAM. Its 13.6G hard disk drive was about the same size as the Adelong, ComfortView, Gateway and THX systems, and its 17in monitor was also fairly standard in this category.

The XPS T550 was the only system in this category to have an 8x DVD drive. Given the rarity of data DVDs, this is unlikely to make much of a difference, although it's likely to be very fast at reading data CDs as well. A majority of the systems in this category used variations of the nVidia TNT2 graphics chip, but Dell chose a 3dfx Voodoo3 graphics card.

An interesting choice for 3D graphics; it scored well in the 3DMark 99 and below average in all the Viewperf tests. It came second in the Half-Life timedemo test. Half-Life uses 3dfx's proprietary Glide API, unlike the other tests that use OpenGL and DirectX. The XPS T550 will perform very well for applications that use Glide, but

poorly for those that don't. A large number of games are programmed to use Glide, but there are exceptions.

In all the other tests we ran, the Dell was an average performer. And as usual, Dell



puts a little extra into the 'less important' aspects such as soundcard, speakers, mouse and keyboard.

Josh Mehlman

Distributor	Dell
Phone	1800 292 313
Online	http://www.ap.dell.com/au/
Price	\$2,851
In short	Average performance, mixed 3D.

standard components — 128M of RAM, Pentium III 500MHz processor and a 17in monitor, but there are a few differences.

The Performance 500 is one of the six systems in this category to have a DVD



drive, but it was one of the few of those that could handle playing a DVD full screen with little jerkiness. The monitor is crisp and clear, and relatively flat. The Sound Blaster Live soundcard and Boston Acoustics speaker system are a great addition to the home theatre experience of this machine.

For the most part, the system sat in our test results where you'd expect it to. The graphics weren't the best, the CPU and FPU results weren't the highest, and the Half-Life frame rate was low but good enough for gameplay. The hard drive, being one of the larger ones on offer (13.6G) rated second in the Ziff-Davis Business Disk WinMark 99 and third in the High-End Disk WinMark 99. The scores in the latter test impressed us.

This isn't the system with everything (for that you should look at the high-end Gateway machine in the following category), but it is a very good system considering its pricing and configuration.

Darren Ellis

Distributor	Gateway
Phone	1800 500 742
Online	http://www.gw2k.com.au/
Price	\$2,799
In short	Great for the gamer/enthusiast.

Dell Dimension XPS T550

Dell's entry in the sub-\$3,000 category has a strong list of specifications and as usual, it matches its Gateway rival in almost every feature. It starts with a 550MHz Intel Pentium III processor, although two

Gateway Performance 500

In what is becoming standard fare for a machine from Gateway, the Performance 500 offers nothing new, but packs a little bit more into the bundle than a usual meat-and-potatoes system. It has fairly

IBM Aptiva GOA

In a room full of beige PCs, IBM's Aptiva stood out. Not only does it have IBM's groovy but slightly odd case design, it's also black. We're not sure why it makes such a difference, but the colour really gives the Aptiva a presence that most PCs lack.

As usual, IBM has worked hard to make the PC easy to use for the less experienced. The keyboard includes controls for the CD and sound volume, keys for your browser and coloured buttons you can program to launch your favourite applications. The mouse has a scrolling control that, unlike a wheel controller, allows you to scroll quickly or slowly in either direction depending on how far you push it. It also has a well-designed help system.



Unfortunately, all this work on the outside was not matched by the inside. The Aptiva has a 450MHz Intel Pentium III processor, equal slowest in the category, and 64M of memory. Its 6G hard disk drive is the smallest in the category, as is the 15in monitor. Its graphics card and soundcard are also the less expensive varieties.

This led to performance figures that simply didn't match the rest of the field. The Aptiva came last in five tests, and its best score was fourth last.

To be fair, at \$1,999 it's significantly cheaper than all the other PCs in this category, but its poor components make it underpowered even for its low price.

Josh Mehlman

Distributor	IBM
Phone	1800 815 154
Online	http://pc.ibm.com/ au/aptiva/
Price	\$1,999
In short	Looks good, but is underpowered.

Pioneer 2000 SOHO Pentium III

This is the second system in this category based around the Pentium III 600MHz processor, and for the most part it was a neck-and-neck race between the two for supremacy. The 2000 SOHO Pentium III was third in the Ziff-Davis CPUmark test,

but managed to scrape through to second place in the FPU WinMark test. Neither of the faster Intel machines could catch the slower Athlon in both of those benchmarks.

One of the system's strengths was the hard drive. It powered through the tests, garnering a good Business Disk WinMark score but blazing away in the High-End test, where it came second. Graphics-wise, it also did quite well — the frame rate for Half-Life was superb and the 3DMark 99 Max score couldn't be beaten, but for 2D it didn't do well.

For a SOHO machine, the system comes with some strange components. The competent Voodoo3 3000 video card would seem more at home in a gamer's machine, as would the 50x CD-ROM. Aside from these two quirks, it lives up to its expectations. This system has better speakers than the budget Pioneer, but this speaker and subwoofer combination can't hold their own against the the Altec Lansing or Boston Acoustics sets shipped by Dell and Gateway.



Darren Ellis

Distributor	Pioneer
Phone	(02) 9260 2888
Online	http://www.pioneercomputers.com.au/
Price	\$2,999
In short	An odd mix of gaming and SOHO.

THX Apollo

The Apollo's 128M of memory, 13G hard disk drive and 17in monitor were all on par for this category. Its bundled software was about as useful as the software that came with any of the other systems we looked at. THX included a 450MHz Intel Pentium III processor, equal slowest in this category. This led to some average results in the processor tests and a rather poor showing in the disk tests.

What the THX Apollo lost in processor speed, it gained in multimedia. It has an Apollo Riva

Editor's Choice



Adelong Athlon PC 550MHz

Highly commended Apple iMac DV Special Edition

The Adelong Athlon PC 550MHz was a clear winner in this category. Its AMD Athlon processor whipped every other system here in the important CPUmark 99 and also in the FPU WinMark99 test, beating the rest of the Intel-based pack. The other test results were equally pleasing, considering the system has half the RAM of most of the other systems.

The iMac just got sexier — more RAM, faster processor, better plastic casing, good DVD and audio and a highly palatable price. Not just for the Mac evangelists.

TNT2 Ultra graphics card, which uses the high-end TNT2 Ultra graphics processor. It has a 6x DVD drive, a reasonable soundcard and a beefy pair of Lonsen LS-880 speakers that are equal to, if not better than, the speaker/subwoofer combos of the Dell and Gateway systems. The keyboard has CD player and audio controls, as well as a small number of programmable application launch buttons.

Although it was crippled somewhat by its slower processor, the Apollo still performed well in all the graphics tests. Its 2D graphics was above average and its scores in the 3D graphics tests were all average or above.

You won't get a better multimedia experience under \$3,000.

Josh Mehlman

Distributor	THX
Phone	(02) 9262 1588
Online	N/A
Price	\$2,950
In short	Not the fastest, but great graphics and sound.



Fast. Flexible. Reliable.

THE BEST MAIN BOARD OF '99 MS-6163 ATX BX MOTHERBOARD

“The MS-6163 support 15 different FSB setting, from 66 to an impressive 153MHz. You also get multiplier settings from 3X to 8X at 0.5X multiples. Even though Intel is now locking down the multiplier setting on its chips, You can still manipulate the FSB to squeeze more speed out of it, and this board is ideal. What makes this board even better is that it also allows you to adjust the core voltage from within the BIOS. It also supports an on screen display of CPU and system temperature as well as fan RPM speeds ... Everything on the board is well located ...”

Nov '99 Australian PC User

“When it comes to motherboards with flexibility, the MSI MS-6163 is truly a work of art”

Micro-Star International is the most reputable motherboard in China's DIY market

From the survey conducted by the "China Computerworld" magazine in July, Micro-Star International has dominated the DIY (Do It Your Self) market in China. Furthermore, Micro-Star International defeated other competitors and become the No. 1 brand in China's DIY computer market again from the last survey conducted by the "Micro Computer DIY" magazine in October.

The objective of the survey is to determine the most popular and the No. 1 chosen brand when consumers purchase their computer products.

The excellent product quality and service made Micro-Star International the No. 1 motherboard manufacturer in the consumer's mind. Together with the outstanding results among the pricing and product ratings, there is no doubt about Micro-Star's distinguished brand position as the No. 1 motherboard in China's DIY market.



MICRO-STAR INTERNATIONAL

<http://www.msi.com.tw>

MSI COMPUTER AUSTRALIA PTY LTD

<http://www.msicomputer.com.au>

National Distributor
SYNNEX

NSW Tel (02) 8877 9800

QLD/NT Tel (07) 3876 7222

VIC/SA/TAS Tel (03) 9538 0000

WA Tel (08) 9210 9800

OUTSTANDING AWARDS



1999
Innovation
Award
Overclock.
digiweb's France



Editor's Choice
Computer Paper March '99
China.

RUNIPCE
EDITOR'S
CHOICE
ASIA PACIFIC

Editor's Choice
RunIPC
Magazine
Feb '99
Taiwan.

ComputingPro.com

"One of the best BX boards
out in the market".
ComputingPros



"The happy
quartet of IDEs
all shining
brightly"



"Best Motherboard".
PC USER Aug. '99



"Product of the Year".
PC USER Nov. '99

The High-Performance PC Guide

"reached 98 points on a
possibility of 100".



Overclocker's
Paradise
GameStar computer
magazine April '99
Germany.



"The Five Star Award".
Hardwarezone.com April '99



"High score in the Slot 1
ATX category".
PC Intern June '99

MSI THE WORLD OVER



MSI

• QUALITY • RELIABILITY

China (August 6, 1999) The **China Computerworld**, a well-known personal computer magazine in China, recently conducted a market survey to compare various motherboard manufacturers' market share and positions. The result shows that **Micro-Star International** (MSI) dominates the DIY (Do-It-Yourself) market segment, as many PC enthusiasts rate MSI products to be the most **reliable** and **user-friendly** brand. For more information, please visit Micro-Star International at <http://www.msi.com.tw>



- MS-6163Pro - Intel 440BX**
- Designed for Intel PII/III Slot1 Processor.
 - Free of Jumper and DIP Switch. No manual is needed for your CPU upgrade.
 - Multiple clock support up to 155MHz
 - Adjustable CPU voltage
 - Provides multi-sensors for detecting CPU, Systems, and HDD temperature.
 - Free PC health Mon. and Anti-Virus Software.
 - 5PCI/2ISA/1AGP, ATX
 - 9 Awards around the World
 - Completely Y2K Compliant (NSTL Certified)
 - PC99 Certified



- MS-6182 - Intel 810**
- Designed for PII/III Slot1 processor.
 - Free of Jumper and DIP Switch.
 - High Performance 3D Graphics/Audio Integrated.
 - PTI (Panel Link TV Out) Interface.
 - ATA33/66 Ready.
 - Free PC Health Mon. and Anti-Virus Software.
 - 6PCI/1ISA/3DIMM/1AMR
 - 1PTI, ATX
 - Y2K/PC99 Compliant



- MS-6178 - Intel 810**
- Designed for Celeron S370 processor.
 - Free of Jumper and DIP Switch. No manual is needed for your CPU Upgrade.
 - PTI (Panel Link TV Out) Interface.
 - ATA33/66 Ready.
 - Free PC Health Mon. and Anti-Virus Software.
 - 3PCI/2DIMM/1AMR/1PTI, MATX
 - Y2K/PC99 Compliant

**MICRO-STAR
INTERNATIONAL**



MSI Computer
Australia
Pty. Ltd.
Tel: (02) 9748
0070 Fax: (02)
9748 0789
<http://www.msi-computer.com.au>

National Distributor



NSW: (02) 8977 9800
QLD/NT: (07) 3676 7222
VIC/S.A.TAS: (03) 8638 0000
WA: (08) 9201 9800

SPECIFICATIONS: PCs UNDER \$3,000

	Athlon PC 550MHz	Alpha PIII-550	iMac DV Special Edition	SuperO P Class	ChromeStation 500T	Professional
Product	Athlon PC 550MHz	Alpha PIII-550	Apple	Beyond Computers	BlueFire	ComfortView
Distributor	Adelong	Alpha	Apple	Beyond Computers	BlueFire	ComfortView
Phone	(02) 8344 3190	(03) 9415 9177	13 36 62	(02) 9648 0888	(02) 9439 4394	(03) 9543 6811
Online	http://www.adelong.com.au/	http://www.alpha.computer.com.au/	http://www.apple.com/	http://www.beyondcomputers.com.au/	http://www.bluefire.com.au/	N/A
Price	\$2,945	\$2,999	\$2,999	\$2,999	\$2,999	\$2,880
Processor	AMD Athlon 550MHz	Intel Pentium III 550MHz	Apple PowerPC G3 400MHz	Intel Pentium III 600MHz	Intel Pentium III 500MHz	Intel Pentium III 450MHz
Secondary cache	512K	512K	512K	512K	512K	512K
Tested/maximum RAM and type	64M SDRAM (768M max)	128M SDRAM (768M max)	128M SDRAM (768M max)	128M SDRAM (1,024M max)	128M SDRAM (512M max)	64M SDRAM
Hard disk	13G Quantum	18G IBM Ultra ATA/66	13G Ultra ATA	9GB Quantum Fireball KA	8.4G Ultra ATA	13G Seagate Ultra ATA
Hard disk controller	Via Bus Master PCI IDE	Intel 82371AB/EB PCI Bus Master IDE	IDE controller	Intel 82371AB/EB PCI Bus Master IDE FAT32	Intel 82371AB/EB PCI Bus Master IDE FAT32	Intel 82371AB/EB PCI Bus Master IDE FAT32
Hard disk file system	FAT32	FAT32	HFS	FAT32	FAT32	FAT32
Graphics card	Matrox Millennium G400	nVidia Riva TNT2	ATI Rage 128	WinFast S320 TNT2 Ultra	Intel 810 chipset	nVidia Riva TNT2 M64
Video bus type	AGP	AGP	AGP	AGP	AGP	AGP
Video RAM	16M SGRAM	32M SDRAM	8M SDRAM	32M SDRAM	4M plus system RAM	32M
Video controller chip	Matrox Millennium G400	nVidia Riva TNT2	ATI Rage 128	nVidia Riva TNT2 Ultra	Intel 810 chipset	nVidia Riva TNT2 M64
Graphics driver version	4.11.01.1110	4.11.01.0208	N/A	4.11.01.0188	4.10.01.0107	4.11.01.0208
Monitor	17in Mitsubishi	17in Mitsubishi	15in	15in NEC	17in Philips 107s	19in Auriga
Tested resolution/colour depth/refresh rate	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz
CD-ROM/DVD drive	6x AOpen DVD	40x CD-ROM	4x DVD	40x CD-ROM	48x CD-ROM	6x DVD
Soundcard	Diamond Monster Sound MX300	Sound Blaster Vibra 128 PCI	Diamond Monster Sound MX300	Intel 810 chipset	Aureal Vortex2	N/A
Speakers	Altec Lansing ACS45.1	320W Genius	Built-in Harman Kardon Odyssey	480W Hi Fi speakers	Labtec speakers	Speaker and satellite combination
Modem	56K internal	N/A	56K internal	56K internal	56K internal	56K internal
OS available	Windows 98	Windows 95/98/NT, Linux, OS/2	Mac OS	Windows 98	Windows 98	Windows 98
Warranty	2 years RTB	2 years RTB parts and labour	1 year RTB	3 years limited	2 years RTB parts	5 years labour
Bundled software and accessories	PowerDVD	None specified	10/100 Ethernet connection	None specified	None specified	PC Cillin, 3D drawing software and more.
Product	Dimension XPS T550	Performance 500	Aptiva GOA	2000 SOHO Pentium III	Apollo	
Distributor	Dell	Gateway	Pioneer	Pioneer	THX	
Phone	1800 292 313	1800 500 742	1800 815 154	(02) 9690 2888	(02) 9262 1588	
Online	http://www.ap.dell.com/au/	http://www.gw2k.com.au/	http://pc.ibm.com/au/apitva/	http://www.pioneercomputers.com.au/	N/A	
Price	\$2,851	\$2,799	\$1,999	\$2,999	\$2,950	
Processor	Intel Pentium III 550MHz	Intel Pentium III 500MHz	Intel Pentium III 450MHz	Intel Pentium III 600MHz	Intel Pentium III 450MHz	
Secondary cache	512K	512K	512K	512K	512K	
Tested/maximum RAM and type	128M SDRAM (768M max)	128M SDRAM (384M max)	64M SDRAM (256M max)	128M SDRAM (768M max)	128M SDRAM (1,024M max)	
Hard disk	13.6G Ultra ATA/66	13.6G Western Digital	6G IBM	6.4G Quantum Fireball	13G Quantum Fireball	
Hard disk controller	Intel 82371AB/EB PCI Bus Master IDE	Intel 82371AB/EB PCI Bus Master IDE	Intel 82371AB/EB PCI Bus Master IDE	Intel 82371AB/EB PCI Bus Master IDE	Intel 82371AB/EB PCI Bus Master IDE	
Hard disk file system	FAT32	FAT32	FAT32	FAT32	FAT32	
Graphics card	3dfx Voodoo3 3000	nVidia Riva TNT2	53	3dfx Voodoo3 3000	Apollo Riva TNT2 Ultra	
Video bus type	AGP	AGP x2	AGP	AGP	AGP	
Video RAM	16MB SDRAM	32M SDRAM	8M SDRAM	16MB SDRAM	32M SGRAM	
Video controller chip	3dfx Voodoo3	nVidia Riva TNT2	s3	3dfx Voodoo3	nVidia Riva TNT2 Ultra	
Graphics driver version	4.11.01.9132	4.11.01.0123	4.11.01.9540-8.03.03	4.11.01.0441-1.00	4.11.01.0191	
Monitor	17in	17in EV700	15in IBM	15in Mitsubishi	17in Mitsubishi	
Tested resolution/colour depth/refresh rate	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	
CD-ROM/DVD drive	8x DVD	6x DVD	40x CD-ROM	50x CD-ROM	6x DVD	
Soundcard	Turtle Beach Montego II 320 Voice PCI	Sound Blaster Live	ESS Solo 1	Sound Blaster Live Value OEM	Sound Blaster 128 PCI	
Speakers	Altec Lansing ACS-340	Boston Acoustics BA735	2 external monitor speakers	600W speaker and satellite combination	Lonsen LS-880	
Modem	56K internal	56K internal	56K internal	N/A	56K internal	
OS available	Windows 98	Windows 98	Windows 98	Windows 98	Windows 98	
Warranty	3 years limited	3 years onsite parts and labour	3 years limited	2 years parts, 5 years labour	1 year RTB	
Bundled software and accessories	MS Works Suite 99, Power game pack, McAfee VirusScan	MS Works Suite 99, McAfee VirusScan	KidDesk Internet Safe, IBM Internet Connection, IBM ViaVoice Office 99 and more	None specified	Lotus SmartSuite, WinDVD, 100 hours free Internet access	

Call Beyond

1300 1300 BY

1300 1300 29

Extended Hrs
8:30- 6:30 Mon-Fri
9:00- 1:00 Sat
EST



Beyond SuperO P-Class Systems

SuperO P450

Supermicro Mid/Tower ATX Case
Intel Pentium III Processor 450MHz
USA Supermicro P6SBA board
64MB 100MHz SDRAM
Winfast S325 32MB TNT2 M64 Video Card
Diamond Monster MX300 Sound Card with A3D
Hi-Fi speakers
6.4GB Quantum Hard Drive
48x CD-ROM Drive
3.5" 1.44MB Diskette Drive
15" LG Digital Monitor
Microsoft Intellimouse and Beyond 107 Keyboard
56k Fax/Data/Voice Modem
Microsoft Windows 98 Second Edition
Adobe Acrobat Reader
Supermicro's Super Doctor
DVD Software Decoder
Intel LAN Desk Client Mgr
3 Year Limited Warranty
Free Lifetime Telephone Support

\$1949* plus delivery

\$16 per week

Upgrade to:	
Video TV output	\$29
10GB Quantum HDD	\$79
17" LG Monitor	\$219
Iomega ZIP Drive 100Mb	\$145
Sony fx DVD	\$189

SuperO P450

Supermicro Mid/Tower ATX Case
Intel Pentium III Processor 550MHz
USA Supermicro P6SBA board
64MB 100MHz SDRAM
Winfast S325 32MB TNT2 M64 Video Card
Diamond Monster MX300 Sound Card with A3D
Hi-Fi speakers
10GB Quantum Hard Drive
48x CD-ROM Drive
3.5" 1.44MB Diskette Drive
15" NEC Digital Monitor
Microsoft Intellimouse and Beyond 107 Keyboard
56k Fax/Data/Voice Modem
Microsoft Windows 98 Second Edition
Adobe Acrobat Reader
Supermicro's Super Doctor
DVD Software Decoder
Intel LAN Desk Client Mgr
3 Year Limited Warranty
Free Lifetime Telephone Support

\$2299* plus delivery

\$19.5 per week

Upgrade to:	
Video TV output	\$29
13GB Quantum HDD	\$36
17" NEC Monitor V700	\$189
Iomega ZIP Drive 100Mb	\$145
Sony fx DVD	\$189

SuperO P600

Supermicro Mid/Tower ATX Case
Intel Pentium III Processor 600MHz
USA Supermicro P6SBA board
128MB 100MHz SDRAM
Winfast S325 32MB TNT2 M64 Video Card
Diamond Monster MX300 Sound Card with A3D
Hi-Fi speakers
13.6GB Quantum Hard Drive
Sony fx DVD
3.5" 1.44MB Diskette Drive
17" LG Digital Monitor
Microsoft Intellimouse and Beyond 107 Keyboard
56k Fax/Data/Voice Modem
Microsoft Windows 98 Second Edition
Adobe Acrobat Reader
Supermicro's Super Doctor
DVD Software Decoder
Intel LAN Desk Client Mgr
3 Year Limited Warranty
Free Lifetime Telephone Support

\$3249* plus delivery

\$28 per week

Upgrade to:	
Video TV output	\$29
20GB Quantum HDD	\$189
17" Sony ES Trinitron Monitor	\$299
17" Sony FD Trinitron monitor	\$389
Iomega ZIP Drive 100Mb	\$145



*Prices and specifications subject to change without notice. All prices shown include tax but delivery is additional.**

Beyond can arrange rentals based on a 36 month term excluding stamp duty and FID which varies from state to state.

Beyond

www.by.com.au

Test results: PCs under \$3,000



Product High-End Disk WinMark

Alpha PIII-550	17,130
Pioneer 2000 SOHO Pentium III	13,200
Gateway Performance 500	12,400
Beyond SuperO P Class	10,050
ComfortView Professional	9,220
Dell Dimension XPS T550	8,990
Adelong Athlon PC 550MHz	8,890
THX Apollo	8,660
IBM Aptiva GOA	7,700
BlueFire ChromeStation 500T	6,820

Product Business Disk WinMark

Alpha PIII-550	7,190
Gateway Performance 500	3,920
Beyond SuperO P Class	3,570
Pioneer 2000 SOHO Pentium III	3,550
Adelong Athlon PC 550MHz	3,140
Dell Dimension XPS T550	3,140
THX Apollo	2,780
BlueFire ChromeStation 500T	2,430
ComfortView Professional	2,410
IBM Aptiva GOA	2,350

Product Business Graphics WinMark

Adelong Athlon PC 550MHz	250
Alpha PIII-550	237
Beyond SuperO P Class	233
Pioneer 2000 SOHO Pentium III	221
THX Apollo	213
Dell Dimension XPS T550	206
Gateway Performance 500	185
BlueFire ChromeStation 500T	160
ComfortView Professional	152
IBM Aptiva GOA	149

Product High-End Graphics WinMark

Adelong Athlon PC 550MHz	730
Alpha PIII-550	673
Beyond SuperO P Class	654
Pioneer 2000 SOHO Pentium III	606
THX Apollo	602
Dell Dimension XPS T550	575
BlueFire ChromeStation 500T	523
Gateway Performance 500	521
ComfortView Professional	508
IBM Aptiva GOA	486

Product Viewperf Advanced Visualiser

Beyond SuperO P Class	13.8
Alpha PIII-550	13.29
THX Apollo	12.4
Adelong Athlon PC 550MHz	11.66
Gateway Performance 500	11.54
BlueFire ChromeStation 500T	11.25
Pioneer 2000 SOHO Pentium III	5.11
Dell Dimension XPS T550	4.837
IBM Aptiva GOA	4.22
ComfortView Professional	Unable to run

Product Viewperf Data Explorer

Alpha PIII-550	14.06
Beyond SuperO P Class	14.04
Gateway Performance 500	13.15
THX Apollo	12.95
BlueFire ChromeStation 500T	12.6
Adelong Athlon PC 550MHz	5.56
Pioneer 2000 SOHO Pentium III	4.17
IBM Aptiva GOA	3.48
Dell Dimension XPS T550	0
ComfortView Professional	Unable to run

Product Viewperf Lightscape

Beyond SuperO P Class	1.64
Alpha PIII-550	1.6
THX Apollo	1.49
Gateway Performance 500	1.37
BlueFire ChromeStation 500T	1.3
Adelong Athlon PC 550MHz	1.06
Pioneer 2000 SOHO Pentium III	0.76
IBM Aptiva GOA	0.66
Dell Dimension XPS T550	0.51
ComfortView Professional	Unable to run

Product Viewperf DesignReview

Alpha PIII-550	8.51
Beyond SuperO P Class	8.51
THX Apollo	8.04
Gateway Performance 500	7.37
BlueFire ChromeStation 500T	6.47
Adelong Athlon PC 550MHz	5.06
Dell Dimension XPS T550	1.44
Pioneer 2000 SOHO Pentium III	0
IBM Aptiva GOA	0
ComfortView Professional	Unable to run

Product Business Winstone 99

Alpha PIII-550	27
Pioneer 2000 SOHO Pentium III	26.5
Beyond SuperO P Class	26
Gateway Performance 500	24.5
Dell Dimension XPS T550	22.6
Adelong Athlon PC 550MHz	22.5
BlueFire ChromeStation 500T	21.5
IBM Aptiva GOA	20.6
ComfortView Professional	19.5
THX Apollo	Unable to run

Product CPUMark 99

Adelong Athlon PC 550MHz	51.2
Pioneer 2000 SOHO Pentium III	44.5
Beyond SuperO P Class	44.2
Alpha PIII-550	43.6
Dell Dimension XPS T550	41.2
THX Apollo	40.2
Gateway Performance 500	38.1
BlueFire ChromeStation 500T	38
IBM Aptiva GOA	38
ComfortView Professional	34.3

Product 3DMark 99 Max

Pioneer 2000 SOHO Pentium III	5,711
Alpha PIII-550	5,676
Adelong Athlon PC 550MHz	5,550
Beyond SuperO P Class	5,543
THX Apollo	5,280
Dell Dimension XPS T550	5,252
Gateway Performance 500	4,767
ComfortView Professional	4,225
BlueFire ChromeStation 500T	4,007
IBM Aptiva GOA	3,456

Product FPU WinMark 99

Beyond SuperO P Class	3,030
Pioneer 2000 SOHO Pentium III	3,010
Adelong Athlon PC 550MHz	2,990
Alpha PIII-550	2,930
THX Apollo	2,780
Dell Dimension XPS T550	2,780
IBM Aptiva GOA	2,540
BlueFire ChromeStation 500T	2,530
Gateway Performance 500	2,500
ComfortView Professional	2,290

Product Half-Life timedemo

Pioneer 2000 SOHO Pentium III	47
Dell Dimension XPS T550	40.5
Beyond SuperO P Class	38
Alpha PIII-550	36
THX Apollo	35
Adelong Athlon PC 550MHz	31.9
BlueFire ChromeStation 500T	31
Gateway Performance 500	27.5
IBM Aptiva GOA	23.5
ComfortView Professional	20.5

Virtual Drive™

FAR STONE

Virtual Drive

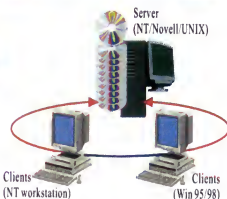
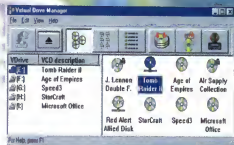
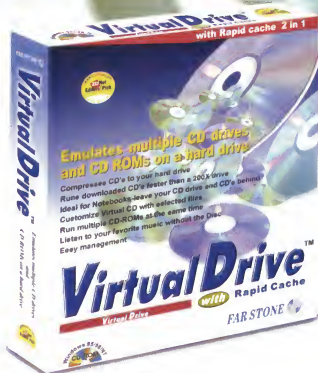
with Rapid cache 2 in 1

Emulates multiple CD drives and CD ROMs on a hard drive



New! Version 2000

- *Emulates up to 1000 CD Jukeboxes on your network
- *Support CD Title, CD Audio, VCD Windows 2000/NT/98/95
- *Create 23 Virtual CD Drivers in windows 98/95
- *Faster than 2000X CD-ROM
- *Network Capability CD Server
- *Speed up Physical and Virtual CD-ROM
- *Customize Virtual CD-ROM with selected files
- *More than 3000 schools & companies are running Network Version



Master Distributor:

Elite Industries Group
22 Bridge street Rydalmere
Tel: (02) 9898-0222
Fax: (02) 9898-1053
Email: sales@eliteindustries.com.au
www.eliteindustries.com.au

Regional Distributor:

NSW & ACT: Megapower Products
Tel: (02) 9410-0888
Fax: (02) 9410-1888
Email: sales@megapower.com.au
www.megapower.com.au

WA: Y-Micro
Tel: (08) 9244-2888
Fax: (08) 9244-2080
Email: coliny@ymicro.com.au

QLD: Elite Industries.com
Tel: (07) 3262-2633
Fax: (07) 3262-2995
Email: terry@eliteindustries.com.au

VIC: Ishtar Information Services
Tel: (03) 9731-0155
Fax: (03) 9731-0166
Email: ishtar@ishtaris.com.au

Ultimate systems

This is the final category in this year's reviews, and the one APC enjoys the most. This is the category where vendors try to make us drool. Our only stipulation was that the system must have a CD-ROM or DVD drive, Windows 98 installed and a minimum of 64M of RAM. There were no price restrictions; the sky was the limit. Last year, APC was delighted with some of the submissions, but this year they were a little tepid. Most of the vendors were a little timid when it came to packing out systems and therefore the price. The only

vendors to go all out were Gateway, Beyond and Alpha Computer.

Last year's Ultimate machines boasted less power than this year's budget category, which is an indication of the speed at which technology changes. The average price for this year's Ultimate machines is \$4,600. Last year this would have scored you a Pentium II 400 or 450MHz with 64M of RAM, a 4G hard drive, a 15 to 17in monitor and a DVD, if you were lucky. This year, the average Ultimate system comes with nothing less than a 600MHz Pentium III or 600MHz

Athlon, 128M of RAM, a 13G hard drive, a 17in monitor and a DVD drive. Surprisingly for such highly configured systems, there were no 21in monitors. Two of our Ultimate systems also came with CD-RW drives installed.

As mentioned in the introduction to 'Systems under \$3,000', none of these machines came with hardware DVD decoder cards, and not all ran perfectly in full-screen mode with the software players. The exception to this rule was the Gateway Performance 600XL, which ran seamlessly and had fabulous audio.

Alpha Computer Athlon 650

In a world dominated by Intel processors, it's great to see a machine that has not only followed a different path, but gives Intel a good run for its money. Alpha and Gateway are the only two vendors that took us seriously when we said 'money is no object' and 'tease us', for this category. Sure, this may be the third-most expensive machine here, and \$400 more than the fourth-most expensive system, but that's not the point.

So what do you get for your hard-earned cash? The specifications that truly stand out are the AMD Athlon 650MHz processor (Pioneer is the only other to follow suit here), the 19in monitor, excellent speakers and, wait for it, the two 20G Seagate hard drives in RAID configuration. Even if that is overkill, if you take one of the drives out and drop the price down, you've still got a great machine.

Usually a system so encumbered with components tends to bog down under pressure, but not this one. It topped the 2D processing tests with a very high lead in the Ziff-Davis High-End Graphics WinMark. It was just behind the Pioneer

system in the CPUmark 99 and FPU WinMark 99 tests, and was the fastest in the Business Winstone 99 test. We're not entirely sure where this system fits in — the gaming results (3DMark 99 Max was not so good, the Half-Life fps was fantastic) plus the monitor, DVD drive and speakers lend itself to a gaming machine, but the two hard drives in the RAID configuration tend to point towards a high-end corporate box. All up though, if you want a top-class home theatre/gaming/fun machine and can afford the extra, then go for it.

Darren Ellis

Distributor	Alpha Computer
Phone	(03) 9415 9177
Online	http://www.alphacomputer.com.au/
Price	\$5,390
In short	Not so expensive when you look at all the components.

Beyond Computers SuperO S Class Server

Beyond put its top-of-the-line, top-dollar PC in the same enormous server case as the SuperO P2 Speedo we reviewed last year. Like last year's system, there's still an awful lot of spare room inside. This time around, Beyond has packed a few more extras into the system, so perhaps there's only enough room to swing a smallish cat.

The S Class seems a little confused about

what sort of role it best fulfils. Is it a server? Is it a high-end desktop? Is it a games machine? Despite the name, the S Class Server has several non-server features, such as a CD-RW drive, a Matrox Millennium G400 MAX graphics card and a Diamond Monster MX300 soundcard. Then there's the absence of



speakers, despite the presence of a fairly high-end soundcard. The monitor is a little small for a high-end desktop or games system, but may be too big for a server. Its enormous 256M of memory and SCSI disk controller point to a server, but 9.1G of storage is hardly enough for most server applications.

The Beyond was not exactly a star performer. Despite its SCSI disk interface, its scores were fairly poor in the Ziff-Davis Business and High-End Disk WinMark tests, as well as the Business Winstone 99 test. Its 3D graphics performance was satisfactory, but it performed badly under the Half-Life game test. Similarly, its processor





COMPUTEX TAIPEI

2000

*Stands for
Winning IT Partnerships*



June 5-9
Taipei Int'l Computer Show

<http://TaipeiTradeShows.cetra.org.tw>

Organizers:



China External Trade
Development Council (CETRA)
<http://www.cetra.org.tw>

5 Hsin-yi Rd., Sec. 5, Taipei, Taiwan 110, R.O.C.
Tel: 886-2-2725-1111 Fax: 886-2-2725-1314
E-mail: computex@cetra.org.tw



Taipei Computer
Association (TCA)

Sponsor:



Taipei World
Trade Center

Venue: Taipei World Trade
Center Exhibition Hall

For more information, please contact the local office : **AUSTRALIA** SYDNEY Tel: 61-2-92326999 Fax: 61-2-92327429 E-mail: cebrasyd@ozemail.com.au

performance was satisfactory, but its Pentium III couldn't beat the AMD Athlon.

Josh Mehman

Distributor Beyond Computers
Phone (02) 9648 0888
Online <http://beyondcomputers.com.au/>
Price \$5,999
In short PC with an identity crisis. Decent performance, but we're unsure what it's suited to.



In short

You'll be digging deep to afford this one, but some things are worth it.

Dell Dimension XPS T600

Before delving into the nitty gritty of this machine, it's necessary to have a short rave about the video card it used. At first APC was disappointed, but when the drivers were upgraded for the nVidia GeForce card (still new at the time of review) the performance increase was phenomenal, especially for those programs that are optimised for the GeForce. When optimised programs (that is, games) are released, look out world. The only test here that demonstrated this performance increase was the Viewperf test. If it wasn't double the next-highest score, it was three or five times the frames.

The rest of the system's specifications are par for the course for this category: 600MHz Pentium III and 128M of RAM. The only other indulgences are a 20.4G hard drive and a 19in monitor. For once, Dell is not the leader of the pack in terms of performance — the Ziff-Davis CPUmark 99 and FPU WinMark 99 scores are the second slowest (just above Gateway). The hard drive is not the fastest of those listed here, settling into the middle of the pack, but when you compare the speeds right across the board you'll note that the drive is still very, very fast.

The system is strong for multimedia; it has a 19in monitor and amazing audio. For years APC has been a big fan of the Altec Lansing speakers shipped with high-end Dell machines, and this system's four-speaker and subwoofer setup is fabulous.

Darren Ellis

Distributor Dell
Phone 1800 292 313
Online <http://www.ap.dell.com.au/>
Price \$4,799

Gateway Performance 600XL

Gateway's Performance 600XL is for those who must have the latest. There was a time when three speakers were considered enough, but now you need five speakers for full 3D surround sound. The Boston Acoustics Digital Media Theatre speakers provide excellent audio quality when combined with the Sound Blaster Live soundcard. As far as we know, there are only two uses for surround sound on a PC: watching movies and playing games.



Watching movies shouldn't be a problem on the 21in monitor with the 6x DVD drive. Playing games won't be a hassle either thanks to the nVidia Riva TNT2 graphics card. The 34G hard disk drive will give you enough space for a fair number of games. The CD-RW drive should be handy for backing up your system and making legal backup copies of your software.

Gateway may have dropped the ball a little in providing a Riva TNT2 graphics card instead of a GeForce, but by the time you read this, chances are you'll be able to select a GeForce

card for your system if a TNT2 isn't enough.

The Gateway's hard disk drive was fast enough to compete with a SCSI RAID system in the Alpha Athlon 650. Its scores in 3DMark 99 Max and the Half-Life timedemo were reasonable, and it came second to the Dell's astounding GeForce card in all the Viewperf tests. As a contender for the most expensive system in this category,

you sure get a lot for the price.

Josh Mehman

Distributor Gateway
Phone 1800 500 742
Online <http://www.gw2k.com.au/>
Price \$5,699
In short Want it all? Here it is.

Packard Bell Platinum 600

Packard Bell has kept a low profile for a very long time, so it's great to review one of its systems. Not having reviewed one for a while, APC couldn't help but be reminded of the company's past mistakes; namely shoddy service and substandard systems. Packard Bell assured APC this was the reason for its two-year hiatus. It also assured APC that this phase is over, and more of its systems will be gracing these pages in the next year.

Packard Bell has never billed itself as a vendor of high-performance, latest and greatest machines. Rather it is the friendly, affordable face of computing — you take the computer home, you plug it in and off you go. Certainly the specifications and price point are quite attractive, but what's under the hood?

Based around a 600MHz Pentium and 128M of RAM, the Platinum 600 is not going to blow your socks off — at least, not until you start playing games on it. The Ziff-Davis CPUmark 99 and FPU WinMark 99 scores are below average, as are the 2D



Your enterprise is only as available as your power

Maintain data centre high-availability with APC Symmetra Power Array

Although today's networking equipment is more reliable than ever, there's still one element of your enterprise that can't be counted on: power. A data centre is the core of your enterprise and requires the highest level of availability. Surges, sags or blackouts result in downtime and valuable data loss costing your business thousands of dollars.

According to HP the biggest cause of network downtime is hanging network operating systems. The best way to minimise hung systems is to increase power availability with APC Symmetra Power Array. Symmetra is available in 4 to 16 kVA models offering unsurpassed scalability, redundancy and 99.999% data centre uptime. What's more, APC Australia provides toll-free technical and customer support so you can join over 8 million customers worldwide who already rely on APC's products, service and support programs.



Scalability: Symmetra will meet your power needs now and in the future

Growing power demands of data centres make cost-effective power protection difficult. Symmetra's scalability provides the flexibility to adapt without reinvestment. With Symmetra's load-sharing modules you can build, expand and re-configure your Power Array simply. Modules can be replaced without shutting down your system, eliminating downtime.



Redundancy: Symmetra maximises uptime

If a power module ever fails, Symmetra runs in parallel, sharing the load evenly. Symmetra's unique technology works instantly, protecting your data centre and maintaining high-availability. Modules can be easily installed or removed to manage redundancy effectively. Additionally, Symmetra is available in single or three phase to ensure conformity with multiple current draws.

Manageability: Symmetra controls power from anywhere on the enterprise

PowerChute plus shutdown software integrates with popular server management platforms providing UPS diagnostics and complete power control from anywhere on the enterprise. Add UPS

accessories to provide remote out of band management, environmental monitoring and SNMP.

Serviceability: Symmetra decreases your overall cost of ownership

A typical legacy UPS has a single point of failure. Symmetra's modular and hot-swappable components eliminate this risk and make maintenance easy. Further lower ownership costs by servicing the unit yourself, using your current service provider or by choosing an APC on-site contract.

APC
Legendary Reliability™

APC Australia: Level 27 Northpoint, 100 Miller Street, North Sydney, 2060 • Fax: (02) 9955 2844 • E-mail: anzinfo@apcc.com

©1999 American Power Conversion. All trademarks are the property of their owners. R84E9EF-AU



FREE APC Symmetra Information!

Order now <http://promo.apcc.com> Key Code 47730K or Call: (02) 9955 9366

results, but the real difference is in the Half-Life timedemo test. Its Voodoo3 3000 card scored the highest frame rate of any card—an amazing 52fps.

The system comes with a CD-RW drive, a huge bundle of software (too many to list in the specification table) and a great set of speakers. However, it only comes with a one-year warranty, which is less than that provided by any other vendor featured.

Darren Ellis

Distributor Packard Bell
Phone (02) 9700 5552
Online <http://www.packardbell.com.au/>
Price \$3,499
In short Highly competitive pricing but its performance is a little weak.

Pioneer Power PC K7-650MHz

As one of the first AMD Athlon-based systems that APC has had the opportunity to review, we expected a little more. When a system boasts one of the fastest processors in the world, you'd expect it to have a little more pizzazz.



Instead, Pioneer has put together a system that has a very fast processor, and that's all.

Pioneer's Power PC K7-650MHz is comparable in specifications to the similarly priced Packard Bell and THX systems. The Pioneer has the same size memory, hard disk drive and monitor as the other two. It has a 3dfx Voodoo3 3000 graphics card just like the Packard Bell and a 6x DVD drive like the THX.

As we've noted previously, Intel and AMD put a large premium on their fastest processors. Pioneer has probably paid hundreds of dollars extra to get a 650MHz Athlon rather than the 600MHz of the THX system. To compensate, Pioneer has scrimped on

components like the soundcard, speakers and graphics card.

Given its processor, you would expect the Pioneer to top just about every test. However, its relatively slow hard disk drive cut it down to third place in the disk tests, and its graphics card gave an unimpressive performance in the OpenGL-based Viewport tests.

In terms of sheer processing power, you won't find a faster PC at the moment, but the rest of the system is half-baked. This might be an advantage in certain business contexts, but most people want more from a PC.

Josh Mehlman

Distributor Pioneer
Phone (02) 9690 2888
Online <http://www.pioneercomputers.com.au/>
Price \$3,890
In short Powerful processing, but that's all.

THX The Probe

APC wasn't particularly blown away by any of the THX systems submitted for review, but The Probe had more redeeming features than any of the others. For the price point, THX has managed to cram a

few extra goodies into the system, which should keep the more discerning punters happy. These are the Athlon processor, the CD-RW, the LS-120 disk drive and the Matrox Millennium G400 Max graphics card.

The Athlon processor allowed it to come third in both the Ziff-Davis CPUmark 99 and FPU WinMark 99 benchmarks, behind the two faster Athlons. This is the only high-end system, and the fourth overall, that we could not get the Business Winstone 99 test to run on. The hard drive was slowest, but there were a few SCSI drives sprinkled in there so it's not all that bad. Graphically, the system was a heady achiever, scoring highly, but behind the two Voodoo3 3000 cards in both of the Ziff-Davis 2D graphics benchmarks. It was the second-fastest card in the 3D-Mark 99 test,



Editor's Choice



Dell Dimension XPS T600

Highly commended Gateway Performance 600XL

It was very hard to choose a winner in this category. In the end it came down to the Dell and the Gateway machines, both of which are great systems. These machines are not so much PCs as full entertainment packages. Throw the stereo out—you have to hear these systems to believe them. Both machines have stunning graphics and excellent components, at a good price. These machines feature the 600MHz Intel Pentium III processor and 128M of RAM.

For what it packs, the Gateway Performance 600XL is worth the price tag, although it's still very expensive. The Dell Dimension XPS T600 comes in with slightly lower specifications and is subsequently easier on the wallet.

achieving a very high score, and its Half-Life frame rate was nothing to sneeze at, although not the highest.

The Lonsen speaker set and the soundcard that came with the system are excellent, which makes watching DVDs a pleasure, although they were slightly jerky. A decent system for the home, but not so good on the work desk.

Darren Ellis

Distributor THX
Phone (02) 9262 1588
Online N/A
Price \$3,995
In short Plenty of features for a decent price.

Your enterprise is only as available as your power

Maintain high server availability with award-winning APC Smart-UPS

Although today's networking equipment is more reliable than ever, there's still one element of your enterprise that can't be counted on: power. Servers are the foundation of your enterprise and require the highest level of power protection available. Momentary surges, sags or blackouts can result in data loss and system downtime.

That's why APC power protection is a critical component in maintaining enterprise availability. When it comes to network-grade power protection, 3-out-of-4 network managers worldwide choose award-winning APC Smart-UPS RM, rack-mount UPS and PowerChute® *plus* software. What's more, APC Australia provides toll-free technical and customer support so you can join over 8 million customers worldwide who already rely on APC's products, service and support programs.



APC Smart-UPS RM prevents the problems that threaten power availability

APC Smart-UPS RM offer instant battery back-up and full-time surge suppression to protect sensitive hardware and data. Smart-UPS RM's space-saving design takes up only 3U of rack space. Hot-swappable, user replaceable batteries can be easily accessed from a convenient front panel without shutting down connected equipment.

PowerChute *plus* power management software enhances network reliability

In the event of extended power loss, PowerChute *plus* automatically shuts down your server safely, protecting data integrity. Monitoring the



health of your Smart-UPS is easy: environmental information, UPS settings and scheduling UPS

tests are just a click away. PowerChute *plus* is certified for use with all major operating systems so you can be sure of compatibility and support.

APC accessories make enterprise-wide UPS management easy!

APC UPS accessories can be installed in Smart-UPS RM's SmartSlot™ Bay to provide support for multiple servers, hubs, switches and routers. Add APC's PowerNet™ SNMP Adapter to power, shut down or reboot connected equipment from anywhere on the enterprise. Other accessories provide out-of-band UPS management and environmental monitoring.

APC
Legendary Reliability™

APC Australia: Level 27 Northpoint, 100 Miller Street, North Sydney, 2060

Fax: (02) 9955 2844

E-mail: anzinfo@apcc.com

©1999 American Power Conversion. All Trademarks are the property of their owners. RB4E3EF-AU



FREE APC Smart-UPS Information!

Order now <http://promo.apcc.com> Key Code 47728K or Call: (02) 9955 9366

SPECIFICATIONS: ULTIMATE SYSTEMS

Product	Athlon 650	SuperO 5 Class Server	Dimension XPS T600	Performance 600XL
Distributor	Alpha Computer	Beyond Computers	Dell	Gateway
Phone	(03) 9415 9177	(02) 9648 0888	1800 292 313	1800 500 742
Online	http://www.alphacomputer.com.au/	http://beyondcomputers.com.au/	http://www.ap.dell.com/au/	http://www.gw2k.com.au/
Price	\$5,390	\$5,999	\$4,799	\$5,699
Processor	AMD Athlon 650MHz	Intel Pentium III 600MHz	Intel Pentium III 600MHz	Intel Pentium III 600MHz
Secondary cache	128K	512K	512K	512K
Tested/maximum RAM and type	128M SDRAM (768M max)	256M SDRAM (1,024M max)	128M SDRAM (768M max)	128M SDRAM (384M max)
Hard disk	Two 20G Seagates in RAID config	9.1G Seagate Cheetah (SCSI)	20.4G	34G IBM Ultra ATA/66
Hard disk controller	AMD 756 PCI Bus Master Dual IDE	Intel 82371AB/EB PCI Bus Master IDE	Intel 82371AB/EB PCI Bus Master IDE	Intel 82371AB/EB PCI Bus Master IDE
Hard disk file system	FAT32	FAT32	FAT32	FAT32
Graphics card	nVidia Riva TNT2	Matrox Millennium G400 Max	nVidia GeForce	nVidia Riva TNT2
Video bus type	AGP	AGP	AGP	AGP
Video RAM	32M SDRAM	32M SDRAM	32M SDRAM	32M SDRAM
Video controller chip	nVidia Riva TNT2	Matrox Millennium G400	nVidia GeForce	nVidia Riva TNT2
Graphics driver version	4.11.01.0208	4.11.01.1300	4.12.01.0353	4.11.01.0123
Monitor	19in Philips	17in LG Flatron	19in	21in Mitsubishi
Tested resolution/colour depth/refresh rate	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz
CD-ROM/DVD drive	6x DVD (check for CD)	6x DVD	Bx DVD	6x DVD
Soundcard	Sound Blaster Live Value	Sound Blaster Live Value	Sound Blaster Live Value	Sound Blaster Live
Speakers	Altec Lansing CSS4	N/A	Altec Lansing ACS-340	Boston Acoustics Digital Media Theatre Speakers
Modem	56K internal	56K internal	56K internal	56K internal
OS available	Windows 95/98/NT, Linux, OS/2	Windows 98/NT	Windows 98	Windows 98/NT
Warranty	2 years RTB parts and labour	3 years limited	3 years limited	3 years onsite parts and labour
Bundled software and accessories	None specified	CRX120 CD-RW	MS Works Suite 99, McAfee VirusScan	MS Works Suite 99, McAfee VirusScan

ORDER THROUGH CHAOS

chaosmusic.com

CHEAPER MUSIC
SECURE ONLINE
ORDERING

ARTIST
INFORMATION
& MP3s

OVER 400,000
MUSIC TITLES

THE AUSTRALIAN ONLINE MUSIC STORE

Your enterprise is only as available as your power

Maintain high-availability of internetworking equipment with APC PowerStack

Although today's networking equipment is more reliable than ever, there's still one element of your enterprise that can't be counted on: power.

Internetworking equipment requires power protection to ensure communication between your critical business applications. When internetworking equipment goes down due to power problems, it can disrupt hundreds of transactions causing data loss, hardware damage, frustration and loss of revenue.

That's why APC power protection is a critical component in maintaining enterprise availability. When it comes to shielding hubs, routers and bridges from power loss, choose APC PowerStack for complete protection. In addition, APC Australia provides toll-free technical and customer support so you can join over 8 million customers worldwide who already rely on APC's products, service and support programs.



APC PowerStack increases the availability of your internetworking hardware

APC PowerStack provides battery backup for hubs, routers, switches and all other sensitive internetworking equipment. Hot-swappable, user replaceable batteries can be easily accessed from a convenient front panel without shutting down connected equipment.

PowerStack's intelligent battery management increases the life of internetworking hardware
PowerStack features Double SmartBoost™ and SmartTrim™, intelligent battery management to regulate brownouts and overvoltages without battery drain, increasing the life of your batteries. Since PowerStack protects your hubs, routers and switches from daily power dips and sags, the life of your equipment is extended.

PowerStack is easy to install and ready for network expansion

Taking up only 1U of space, PowerStack is easy to install in most rack configurations. Available in 250VA or 450VA models, PowerStack provides four outlets to accommodate network growth.

Expand enterprise manageability with APC PowerStack and MasterSwitch

Use PowerStack in conjunction with APC MasterSwitch to provide your enterprise with remote reboot capabilities, SNMP, Web, Telnet or modem connectivity.



APC
Legendary Reliability™

APC Australia: Level 27 Northpoint, 100 Miller Street, North Sydney, 2060 • Fax: (02) 9955 2844 • E-mail: anzinfo@apcc.com

©1999 American Power Conversion. All Trademarks are the property of their owners. RB4E9EF-AU



FREE APC PowerStack Information!

Order now <http://promo.apcc.com> Key Code 47729K or Call: (02) 9955 9366

SPECIFICATIONS: ULTIMATE SYSTEMS

Product	Platinum 600	Power PC K7-650MHz	The Probe
Distributor	Packard Bell	Pioneer	THX
Phone	(02) 9700 5052	(02) 9690 2888	(02) 9262 1588
Online	http://www.packardbell.com.au/	http://www.pioneercomputers.com.au/	N/A
Price	\$3,499	\$3,890	\$3,995
Processor	Intel Pentium III 600MHz	AMD Athlon 650MHz	AMD Athlon 600MHz
Secondary cache	512K	128K	128K
Tested/maximum RAM and type	128M SDRAM	128M SDRAM (768M max)	128M SDRAM (768M max)
Hard disk	13G	13G IBM Ultra ATA/66	13G Quantum Fireball
Hard disk controller	Intel 82371AB/EB PCI 8us Master IDE	AMD 756 PCI 8us Master Dual IDE	AMD 756 8us Master Dual IDE
Hard disk file system	FAT32	FAT32	FAT32
Graphics card	3dfx Voodoo3 3000	3dfx Voodoo3 3000	Matrox Millennium G400
Video bus type	AGP	AGP	AGP
Video RAM	16M SDRAM	16M SDRAM	32M SDRAM
Video controller chip	3dfx Voodoo3 3000	3dfx Voodoo3 3000	Matrox Millennium G400
Graphics driver version	4.11.01.0442-1.00	4.11.01.0441-1.00	4.11.01.1110
Monitor	17in	17in Mitsubishi	17in Mitsubishi
Tested resolution/colour depth/refresh rate	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz	1,024 by 768/16-bit/85Hz
CD-ROM/DVD drive	24x CD-RW	6x DVD	6x DVD
Soundcard	PCI288-Q3D II	Creative PCI 64 OEM	Sound Blaster Live
Speakers	Speaker and satellite combination	600W speaker and satellite combination	Lonsen LS-880
Modem	56K internal	N/A	56K internal
OS available	Windows 98	Windows 98	Windows 98/NT
Warranty	1 year limited hardware	2 years parts, 5 years labour	1 year RT8
Bundled software and accessories	Huge software bundle of games, productivity tools and utilities	None specified	CRX100 CD-RW, Lotus SmartSuite, World Book Encyclopaedia WinDVD, 100 hours free Internet access

File Edit View Layout Special

stop playing with yourself in the office



**ONLY
\$19.95**

6
G

And start playing with your friends. Play games like you've never played before - **using email**. They're fun, simple to install and easy to play. Make your move, add a friendly message and click "SEND".

Getting and sending email has never been so much fun.

Time to get your hands on e-mail games. Available now at all leading software retailers. Check out the demo at www.emailgames.com





IT ART VISION

RESELLER ENQUIRIES
WELCOME



THE ONLY RELIABLE PC WITH A VISION

JUBILLENUM 2000

GIGABYTE BXC INTEL BX MB
INTEL CELERON 466A CPU
64MB PC-100 SDRAM
1.44 SAMSUNG FDD
6.4GB SEAGATE HDD
40X CD-ROM
8MB AGP VGA
32BIT CREATIVE SOUND BLASTER
AVISION DELUXE ATX CASE
AVISION MULTIMEDIA K/B
AVISION MOUSE & MAT
LOTUS MILLENIUM
MS WIN98 2CD (2ND EDITION)
AVISION 15" MULTIMEDIA MONITOR
56K V90 INTERNAL MODEM

3 YEARS ON-SITE WARRANTY

TITANIUM 2000

GIGABYTE BX2000 INTEL BX DUAL BIOS
INTEL PENTIUM III 600 CPU
128MB PC-100 SDRAM
1.44 SAMSUNG FDD
10.2GB SEAGATE HDD
50X CD-ROM
32MB RIVA TNT2 AGP VGA
PCI 128BIT CREATIVE SOUND BLASTER
AVISION DELUXE ATX CASE
AVISION MULTIMEDIA K/B
AVISION MOUSE & MAT
LOTUS MILLENIUM
MS WIN98 2CD (2ND EDITION)
AVISION 17" MULTIMEDIA MONITOR
56K V90 INTERNAL MODEM

3 YEARS ON-SITE WARRANTY

IT Art Vision

Unit 6, 26 James Street, Lidcombe, NSW 2141

Ph: 02 9643 8022

Fax: 02 9643 8102

www.itartvision.com.au

Photograph by DB Photography
0413 001 667



Test results: Ultimate systems

Product Business Winstone 99

Alpha Athlon 650	28.3
Pioneer Power PC K7-650MHz	27.8
Gateway Performance 600XL	27.1
Beyond SuperO S Class Server	26.9
Dell Dimension XPS T600	26.5
Packard Bell Platinum 600	25.1
THX The Probe	Unable to run

Product High-End Disk WinMark

Alpha Athlon 650	23,500
Gateway Performance 600XL	20,400
Pioneer Power PC K7-650MHz	16,700
Beyond SuperO S Class Server	15,400
Dell Dimension XPS T600	13,000
Packard Bell Platinum 600	11,550
THX The Probe	7,910

Product Viewperf Advanced Visualiser

Dell Dimension XPS T600	71.42
Gateway Performance 600XL	13.41
THX The Probe	12.68
Alpha Athlon 650	11.21
Beyond SuperO S Class Server	10.42
Pioneer Power PC K7-650MHz	6.92
Packard Bell Platinum 600	5.02

Product CPUmark99

Pioneer Power PC K7-650MHz	59.9
Alpha Athlon 650	58.1
THX The Probe	55.5
Beyond SuperO S Class Server	44.7
Packard Bell Platinum 600	44.1
Dell Dimension XPS T600	43.8
Gateway Performance 600XL	43.5

Product Business Disk WinMark

Gateway Performance 600XL	7,180
Alpha Athlon 650	6,870
Pioneer Power PC K7-650MHz	5,420
Dell Dimensions XPS T600	5,080
Beyond SuperO S Class Server	4,200
Packard Bell Platinum 600	3,040
THX The Probe	2,850

Product Viewperf Data Explorer

Dell Dimension XPS T600	27.48
Gateway Performance 600XL	14.49
Alpha Athlon 650	9.2
Beyond SuperO S Class Server	8.09
THX The Probe	6
Pioneer Power PC K7-650MHz	5
Packard Bell Platinum 600	4.07

Product 3DMark 99 Max

Pioneer Power PC K7-650MHz	6,092
THX The Probe	5,894
Beyond SuperO S Class Server	5,734
Packard Bell Platinum 600	5,630
Gateway Performance 600XL	5,507
Alpha Athlon 650	5,359
Dell Dimension XPS T600	5,098

Product Business Graphics WinMark

Alpha Athlon 650	284
Pioneer Power PC K7-650MHz	277
THX The Probe	267
Beyond SuperO S Class Server	235
Dell Dimension XPS T600	234
Gateway Performance 600XL	209
Packard Bell Platinum 600	202

Product Viewperf Lightscape

Dell Dimension XPS T600	3.158
Gateway Performance 600XL	1.52
Alpha Athlon 650	1.5
Beyond SuperO S Class Server	1.25
THX The Probe	1.14
Packard Bell Platinum 600	0.75
Pioneer Power PC K7-650MHz	0

Product FPU WinMark 99

Pioneer Power PC K7-650MHz	3,540
Alpha Athlon 650	3,530
THX The Probe	3,250
Packard Bell Platinum 600	3,040
Beyond SuperO S Class Server	3,030
Dell Dimension XPS T600	2,980
Gateway Performance 600XL	2,980

Product High End Graphics WinMark

Alpha Athlon 650	902
Pioneer Power PC K7-650MHz	820
THX The Probe	795
Dell Dimension XPS T600	668
Beyond SuperO S Class Server	652
Gateway Performance 600XL	602
Packard Bell Platinum 600	592

Product Viewperf DesignReview

Dell Dimension XPS T600	21.72
Gateway Performance 600XL	8.35
Alpha Athlon 650	7.9
Beyond SuperO S Class Server	5.77
THX The Probe	5.48
Pioneer Power PC K7-650MHz	2.44
Packard Bell Platinum 600	0

Product Half-Life timedemo

Packard Bell Platinum 600	54.5
Pioneer Power PC K7-650MHz	52
Alpha Athlon 650	43
THX The Probe	36
Gateway Performance 600XL	31.4
Dell Dimension XPS T600	27.7
Beyond SuperO S Class	21

Solutions for your Business....



Give your business a competitive advantage with MCT computers.
The best computer a company can buy.

MCT Professional System

- Intel® Pentium® III Processor 600MHz
- Intel® SE400 BX-2 board
- 128Mb 100MHz SDRAM
- 512k pipeline burst Cache
- 13Gb Ultra DMA 66 Hard drive
- 3.5" 1.44 Mb Floppy Drive
- 32Mb nRiva TNT2 AGP Card
- 6 x Sony DVD-ROM Drive
- Aureal Vortex A3D Sound Card
- Midtower case with ATX power
- 17" CTX .25 dpi Monitor with Trinitron® tube
- Microsoft® Mouse, 104 Keyboard
- 500W speaker with Sub-woofer
- Microsoft® Windows 98 CD
- Microsoft® Works suite 99
- 56k Internal Winmodem
- 3 years Onsite Warranty



Only **\$3799**

or \$36* per week over 3 years

MCT Multimedia System

- Intel® Pentium® III Processor 450MHz
- *Cyrix* Rhino Board
- 64Mb 100MHz SDRAM
- 512k pipeline burst cache
- 6.4Gb Ultra DMA 66 Hard drive
- 3.5" 1.44 Mb Floppy Drive
- 8Mb Riva TNT AGP Card
- 40 x Sony IDE CD-ROM Drive
- Aureal Vortex A3D Sound Card
- Minitower case with AT power
- 15" CTX .28 dpi Monitor
- Mouse 104 Keyboard
- 200W speakers
- Microsoft® Windows 98 CD
- 3 years Onsite Warranty



Only **\$1899**

or \$19* per week over 3 years



WWW.MCTCOM.COM.AU

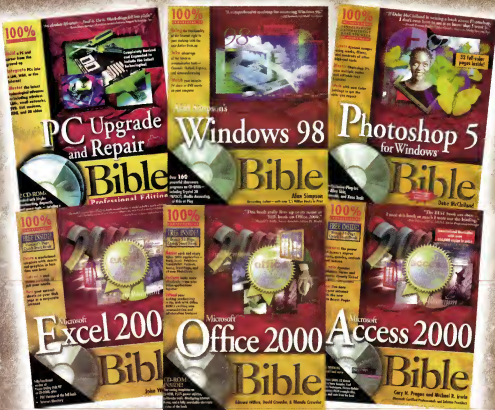
**The right solution for
E-Business Productivity**

Head Office Tel:	02-9642 3388	Chatswood:	02-9415 3355
Perth Tel:	08-9472 7788	Parramatta:	02-9891 3550
Brisbane Tel:	07-3857 6668	Bellingen:	02-6655 0006
Canberra Tel:	02-6291 3221	Coffs Harbour:	02-6651 8001

* Subject to Intel financial approval.

Quality endorsed Company ISO9002 Lic 10107 Standards Australia. The Intel Inside Logo and Pentium are registered trademarks of the Intel corporation.

There is a God.



100% comprehensive.
100% solution-filled.
100% authoritative.
100% essential.

From \$69.95

**THE DEFINITIVE REFERENCE MASTERPIECES -
FROM THE WORLD'S LEADING COMPUTER EXPERTS.**

The IDG Books Worldwide logo is a registered trademark under exclusive license to IDG Books Worldwide, Inc. from International Data Group, Inc. Used by permission.


**IDG
BOOKS
WORLDWIDE**

PROCESSORS: the new wave

This year's Microprocessor Forum in San Jose saw a spate of new processor announcements. Itanium (formerly Merced) details were revealed, and the future of microprocessor architecture was unveiled. **Josh Mehlman** reports.

This year's Microprocessor Forum saw a frenzy of announcements from major microprocessor manufacturers and designers. The area that saw the most action was processors for servers. All vendors are moving towards multilevel cache memory and higher internal bandwidth for their processors, but vendors are taking different approaches to parallelism.

Parallelism is the processor's ability to simultaneously process different elements within a program, making it run faster. There are two broad categories: instruction level parallelism (ILP) and thread-level parallelism (TLP). ILP means having a large number of execution units within a processor and then breaking a single program into chunks to be fed through the execution units. This breaking up process can occur either within the processor, through out-of-order execution, or in the compiler.

TLP involves having several separate threads of instructions (possibly from different programs) and either running them through the same processor to maximise efficient use of processing resources, or running the different threads through different processors. Recent advances in chip manufacturing have made it possible to include more than one processor core on a single chip. Several vendors plan to use this development.

In order to take advantage of TLP, a processor needs both a multithreaded operating system and an application, such as Web serving, that has many threads.

Analysts believe the diversity of approaches is healthy. Insight 64 analyst Nathan Brookwood said, "There are a lot of

clever people in the industry taking very different approaches to maximising performance. In time we will see which approaches are adopted by the marketplace and which fall by the wayside."

The improvements parallelism makes in performance are not proportional; doubling the number of execution units or processors does not double the performance, and it is unclear which approach provides the greatest performance boost.

Itanium

Intel released technical and architecture details of the Itanium (previously known to the world as Merced) processor, but remained secretive about some of its more basic details.

Itanium will be the first processor to use the IA-64 architecture developed by Intel and Hewlett-Packard. According to Harsh Sharangpani, Intel's principal engineer, it will use a level 2 cache integrated on the chip and a level 3 cache in the same package as the processor, running at full clock speed. Sharangpani said that Itanium will have 128 integer and 128 floating-point registers, as well as four integer and four MMX/floating-point execution units. These will allow it to retire up to 20 simple floating-point calculations per clock cycle, 12 double-precision floating-point calculations per clock cycle and eight integer calculations per cycle.

Sharangpani maintains that Intel is on schedule to launch Itanium around the middle of next year. He said that Intel currently has four operating systems running on Itanium, including 64-bit versions of Windows 2000 and Linux. Intel

should finish functional testing by the end of this year, and prototype systems are due early next year. Although Sharangpani produced a functional Itanium chip at the forum, he did not reveal the chip's expected clock speed, power consumption, performance or cost.

Itanium is based on Intel and Hewlett-Packard's Explicitly Parallel Instruction Computing architecture, which relies on the compiler to break the program into several parts that feed through multiple execution units within the processor.

Although Intel's Itanium will execute IA-32 (x86) instructions natively to ensure backward compatibility, its new A-64 instruction set will require entirely new software. Other processor manufacturers announcing products at the Forum preferred to make the best of their current instruction sets.

Power4, Alpha and SPARC

IBM's chief architect Jim Kahle announced details of the new Power4 chip, which will be fully binary compatible with IBM's existing 64-bit PowerPC chips. Expected to ship in 2001, the Power4 will contain two processor cores within the one chip. The two cores will share a level 2 cache, and a level 3 cache will be externally connected to the chip.

IBM envisions workstations using one Power4 chip, but also intends to produce a four-chip module for servers, using a 500MHz bus to connect between the processors. The processor will run at greater than 1GHz.

Australian Personal Computer, Australia's leading computer magazine, keeps you up-to-date with 100% local content, dedicated laboratory testing facilities, and all the latest news, reviews and hands-on information. Not to mention our monthly double cover CD in a jewel case and our companion Web site, updated daily. Subscribe to APC, Australia's longest running, best-selling and most respected technology title, and save up to 34% off the cover price.

Fast Phone Service

For immediate service, use the Fast Phone Service, 8.30 am to 5.30 pm EST, Monday to Friday.

Free-call 1800 252 515

Or complete card and mail to:
APC, Reply Paid 764
ACP Direct, GPO Box 3357
Sydney NSW 2001
(No postage stamp required if posted in Australia)

Or subscribe online at:
apc.magshop.com.au

Published by ACP Tech, a division of ACP Publishing Pty Limited
ACN 053 273 546

ACP Tech

Subscribe online at
<http://apc.magshop.com.au/>



Special APC subscription combos:

APC (12 issues)	\$72
APC (24 issues)	\$132
APC (12 issues) & PC User (12 issues)	\$130
APC (12 issues) & Corporate IT (12 issues)	\$110

save and win!



Subscribe and relax this summer with the convenience of home delivery of Australia's number one computing magazine, **Australian Personal Computer**. **APC** wants to help you relax by offering you the chance to win a trip for two to LA valued at over \$6,000!

You and a friend could be reading the latest edition of **APC** while on an Air New Zealand flight to the heart of California — Los Angeles. You'll be staying four nights at the Westin Century Plaza Hotel & Tower, where you can live it up with the best LA has to offer.

The Westin Century Plaza Hotel & Tower overlooks many local landmarks and is only minutes to sandy beaches, Universal Studios, Disneyland, Beverly Hills and Rodeo Drive. Or you can just sit back and relax with your **APC** amid the hotel's 10 acres of beautifully landscaped surroundings.

So for the convenience of to-your-door delivery and great savings on Australia's leading computer publication, subscribe today for your chance to win!



AIR NEW ZEALAND



WESTIN
HOTELS & RESORTS®



STARWOOD
PREFERRED
GUEST

apcmag

Terms and conditions

Information on how to enter and prize forms part of these conditions of entry. Entry is open to all residents of Australia who subscribe to *Money Magazine* between 3/11/99 and 7/12/99 or subscribe or renew their subscription to *Australian Personal Computer* between 18/11/99 and 22/12/99. Entry is subject to a valid signature against a valid credit card or, if payment is made by cheque, the cheque must be cleared for payment. Subscriptions are to be sent to *Money Magazine*, Reply Paid 764, GPO Box 3542, Sydney 2001; free-call 1800 252 515; online moneymagazine.mogshop.com.au, or to *Australian Personal Computer*, ACP Direct, Reply Paid 764, GPO Box 3357, Sydney NSW 2001; free-call 1800 252 515 or online at apc.mogshop.com.au. Employees and the immediate families of the Promoter and its agencies associated with this promotion are ineligible to enter. Promotion commences 3/11/99. Entries close last received 22/12/99. The draw will take place at Level 10, 54 Park Street, Sydney NSW 1028, at 11 am on 11/01/2000. Winner will be notified by mail and will have their name published in the Public Notices section of the *Australian* on 18/01/2000. Judges' decision is final and no correspondence will be entered into. The first valid entry drawn will win a trip for two to Los Angeles, California, USA. This includes two return economy class airfares ex winner's closest capital city to Los Angeles flying Air New Zealand valued at approximately \$4,000 (as at 20/10/99) and four nights accommodation at The Westin Century Plaza Hotel & Tower, LA valued at approximately \$2,282 (\$US1,500 as at 20/10/99). Total prize pool is valued at \$6,282 (as at 20/10/99). Prize is not transferable or exchangeable and cannot be taken as cash. Any change in the value of the prize occurring between 20/10/99 and the date the prize is claimed is not the responsibility of the Promoter and the difference in prize value will be the responsibility of the winner. All visas, insurance, domestic and international transfers and other ancillary costs are the responsibility of the winner. Prize is valid for 12 months and subject to availability. The promoter shall not be liable for any loss or damage whatsoever (including but not limited to direct or consequential loss) or personal injury suffered or sustained by the prizes or in connection with any other prizes. The Promoter may conduct such further draws at the same place as the original draw as are necessary on 18/4/2000 at 11 am in order to distribute any prizes which remain undistributed by that date subject to any written directions given under Reg 37 of the Lottery and Gaming Regulations 1993 (SA) and Reg 10 of the Art Unions and Public Amusements Regulations 1992 (Qld). If the winner is under the age of 18 years the prize will be awarded to the winner's parent or guardian. The Promoter accepts no responsibility for late, lost or misdirected mail. All entries become the property of the Promoter. All entries will be entered into a database and the Promoter may use the entrants' names and addresses for future promotional, marketing and publicity purposes unless otherwise advised by the entrant. The Promoter is ACP Publishing Pty Ltd, S4 - 58 Park Street, Sydney NSW 1028. ACN 053 273 546. Permit numbers, NSW TC99/9924, Vic 99/3217 issued on 27/10/99, ACT TP99/1654, NT NT99/30S9, SA T99/3642.

Continued from page 127

Dr Joel Emer, Compaq's principal member, technical staff, Alpha Development Group, said the group has taken a different approach for its EV8 processor, due for release in 2002 or 2003. The Alpha EV8 will run at speeds of between 1.2 and 2GHz, and simultaneously run several threads of instructions through its processing units, ensuring they are all in constant use. Each CPU will present itself as four 'thread processing units' (TPUs), and the software can treat each TPU as a separate processor.

Fujitsu subsidiary, HAL Computer Systems, announced its SPARC64 V processor for eight to 64-processor enterprise and scientific servers. HAL spokesperson Michael Shebanow said the SPARC64 V, due in 2001, will be compatible with the UltraSPARC II and will run at 1GHz. Following the strong trend for larger caches, the SPARC64 V will feature a 512K on-chip level 2 cache and a 16M level 3 cache.

AMD goes out on a limb

As well as announcing future plans for the Athlon processor, AMD vice-president for engineering Fred Weber also discussed

AMD's plans to take on Intel's Itanium processor and IA-64 architecture. The company launched a 700MHz Athlon processor, using a 0.25-micron production process and demonstrated an 800MHz Athlon using a 0.18-micron process. Weber said AMD is currently producing 0.18-micron Athlons, but did not say when they will be available.

Versions of Athlon to be released next year will include 1M or 2M level 2 caches running at full processor speed, he said. The frontside bus speed will be increased from 200 to 266MHz. In addition, AMD will release a two-processor chipset, which will have a 266MHz bus and use DDR (double data rate) DRAM. It will feature 4x AGP and a 64-bit 66MHz PCI bus.

Weber also announced AMD's much-discussed competitor to Intel's IA-64 architecture. Dubbed x86-64, it is a 64-bit extension of the current x86 architecture. Betting that IA-64 uptake will be slow, AMD intends to retain compatibility with existing x86 software, while still improving performance. Although the integer part of the instruction set will remain relatively unchanged, AMD will make some changes to the floating-point instruction set, according to Weber.

Finally, AMD announced its Lightning Data Transport (LDT) internal bus, which will significantly increase I/O bandwidth. The Athlon processor will remain connected to the chipset's north bridge (memory controller) using the EV6 bus, but LDT will connect the north bridge to I/O controllers and to north bridge chips of other Athlon processors for multiprocessor systems.

Desktop designs

While server announcements dominated the forum, details of new desktop, media and embedded processors were also released at the conference.


Intel revealed details of its next generation Pentium III chip, codenamed Coppermine. Coppermine will use Intel's 0.18-micron production process, which is already being used to produce the mobile Pentium II 'Dixon' and Pentium III processor. The new chip contains a 256K level 2 cache integrated into the chip (similar to the way the Celeron has 128K integrated), and the cache system has been redesigned to increase its bandwidth and reduce latency, according to Intel's product architecture manager Jim Wilson. Intel also increased the number of buffers to optimise



CHAINTECH
COMPUTER CO., LTD.

<http://www.chaintech.com.tw>

Unveils The First **PC-133** Technology Mainboard Chaintech **OVER-CLOCKING** Technology. **CT-6ATA2**



- Subtle voltage tuning (0.1V increment)
- "Flash BIOS Write Protection"
- Protect your BIOS from virus like "CIH" without any extra H/W cost.
- Jumper free "SeePU" technology for your ease to setup CPU
- Built in High Performance PCI audio with AC' 97 V2.1 Codec and AMR connector for low-cost soft-modem riser
- Linear frequency tuning down to 1MHz precession (Up to 152MHz)
- Supports 133/100/66 MHz FSB
- Supports PC133 SRAM & VCM (Virtual Channel Memory)
- Built in Ultra DMA-66 IDE Controller for your High Speed ATA-66 Hard Drive

US\$150 Free for Full-Program !!

AIRBAG
Advanced, Instant-Increase
In-System Application Group

the processor for the 133MHz bus. Intel released figures from its own tests that showed a 12% to 20% improvement in performance over the current Pentium III chip at the same clock speed.

The new processor has been released running at speeds up to 733MHz, but Intel released performance figures from the Coppermine running at 800MHz, claiming it is capable of even higher speeds.

A new mobile processor from Intel will be the first to feature Intel's Speed Step technology (formerly codenamed Geyserville). This allows the processor to adjust its clock speed and voltage depending on whether the notebook is plugged into an external power source or running on batteries. Wilson claimed this allows the processor to work at 80% of the performance while consuming 50% of the power.

On the PowerPC front, Motorola announced plans to upgrade the recently released G4 processor. Motorola spokesperson Naras lyengar said that Motorola wants to increase the frequency of the processor, and also to improve the number of instructions the processor can perform per clock cycle. *Microprocessor Report* editor-in-chief Keith Diefendorff commented that buyers still view frequency as the strongest

indicator of performance, particularly in the low-end and retail markets. According to lyengar, changes to the G4 include lengthening the pipeline from four to seven stages, adding two more execution units, widening the internal bus from 128 to 256 bits, putting the level 2 cache on the chip and adding support for a level 3 cache. He said the new G4, due to ship next year, will be produced using a 0.13-micron production process and will run at speeds in excess of 700MHz.

Media processing MAJC

Sun Microsystems revealed the first processor based on its MAJC architecture.

Sun's chief architect Marc Tremblay said because most modern processors are old designs that have been upgraded, they contain many inefficiencies. Processors such as Intel's Pentium III have separate execution units and registers for integer, floating-point and SIMD calculations. Tremblay said MAJC was designed to have one set of registers capable of handling all data, and each execution unit within the processor can process all calculations.

Sun's MAJC-5200 contains two separate processor units within the same chip, each

containing four execution units. MAJC-5200 also includes a graphics preprocessor, which can compress 3D graphics information by a factor of 20 times.

Sun believes MAJC's ability to process all types of data makes it suitable for a wide variety of applications previously monopolised by ASICs (Application-Specific Integrated Circuits), such as network interfaces, set-top boxes and graphics processors. Sun claims MAJC-5200 has enough power, for example, to decode six video streams and encode one stream in a videoconferencing system. If used as a 3D graphics accelerator, Sun claims the MAJC-5200 could draw from 62 million to 92 million triangles per second, well beyond the capabilities of current graphics chips.

MAJC chips can be programmed in the high-level C++ and Java languages. However, only the Java virtual machine can automatically extract the parallelism from the code in order to efficiently use the two processors in the MAJC-5200 chip, according to Tremblay.

The MAJC-5200 will run at 500MHz and be produced under a 0.22-micron process. Samples are expected to be available in the second quarter of next year. ■

Camino + IDE RAID + RAM BUS = MEGAPOWER

CT-6CTR

133MHz Slot 1 based with PCI audio, AMR, 4xAGP port, AMR and IDE RAID



- Intel 820 (Camino) two chip AGPset
- Three 184-pin RIMM sockets support up to 1GB DirectRamus
- Innovative **SeePU** technology for jumperless CPU installation
- Embedded PCI audio with AC97 CODEC and support soft modem riser (AMR)
- Optional Creative CT5880 audio chip with 4-speaker 3D capability
- Supports up to 8 IDE devices w/ PIO Mode 4, Multi-Word Mode 4 and Ultra DMA-66 timings
- Support IDE RAID 0/1 solution
- **Flash BIOS write protection** against unauthorized access. With Trend **ChipAway** Virus to ensure virus-free booting procedure

CT-6WSV

100MHz

CT-6WSV2

133MHz



- Slot 1 based with integrated AGP VGA, AMR, LTI port and PCI audio mainboard

- Intel 810[CT-6WSV] or 810e[CT-6WSV2] three chip AGPset
- Supports Intel Pentium-III and Celeron processors up to 600MHz
- Embedded 2D/3D AGP controller w/ DWM technology
- Optional LTI adapter for Panel-Link LCD and TV-out
- Supports PIO Mode 4, Multi-Word Mode 4 and Ultra DMA-66 timings
- Embedded PCI audio with AC97 CODEC and support soft modem riser (AMR)
- Optional Creative CT1373 audio chip with 2-speaker HRTF 3D
- **Flash BIOS write protection** against unauthorized access. With Trend **ChipAway** Virus to ensure virus-free booting procedure

CHAINTech
COMPUTER CO., LTD.

5th Fl., No. 5, Alley 2, Lane 222, Lien Cheng Rd.,
Chung Ho, Taipei Hsien, Taiwan, R.O.C.

TEL:886-2-2240-7000 FAX:886-2-2248-3009
E-mail:sales@chaintech.com.tw



Add **Life** to your PC

Animation
Photo Imaging
Image editing
Desktop Video Editing
3D titling Web effects

Ulead
Systems

www.uleadasia.com

New Product



VideoStudio 4.0

A great way to add a professional touch to your home videos. The new VideoStudio 4.0 now includes editing support for hi-quality video formats such as DV and MPEG-2. New features also include MP3 audio support, unlimited scrolling titles and device control for your DV camcorder.

RRP: \$199.00 / Upgrade: \$129.00

New Product



PhotoImpact 5.0

For image and web graphics editing & creation, nothing beats PhotoImpact 5.0. Intuitive tools and powerful new features such as Image Optimizer, Image Slicer, Component Designer, Java Roll-Over Assistant, Easy Palette, GIF Animator 3.0, Natural Textures Painting Tool and Special Lighting FX let you create professional quality results in half the time.

RRP: \$179.00 / Upgrade: \$129.00

Now includes Bonus
PhotoExplorer 4.2 CD.



MICROSOFT
WINDOWS
COMPATIBLE



TAIWAN DESIGN
OF EXCELLENCE



Cool 3D 2.5

Easy & powerful 3D graphics creation and animations for videos, the Web or still images.

RRP: \$99.00 / Upgrade: \$69.00

New Product



WebRazor Pro 2.0

Packed with 4 powerful tools, SmartSaver Pro, GIF Animator 4.0, Photo Explorer & Cool 3D 2.5.

RRP: \$199.00 / Upgrade: \$139.00

New Product



GIF Animator 4.0

The standard tool for creating GIF animations for the Internet & multimedia presentations.

RRP: \$99.00 / Upgrade: \$69.00

New Product



PhotoExpress 3.0

The fast track to photo fun. Easy to use photo imaging software & Cool 360.

RRP: \$99.00 / Upgrade: \$69.00

Available at any

Harvey Norman

Clive Peeters

HARRIS
TECHNOLOGY

MAIL ORDER
Software
AUSTRALIA PTY LTD.
www.megamart.com.au
PH: (03) 9663 6111



For more information contact

lakovision

on 1800 657 601 or visit ... www.lakovision.com.au

beyond xml

the future of markup languages

XML — the heir apparent to the Internet's lingua franca, HTML — has the potential to drive Internet-based communication to new levels, and will prove extremely important in future applications. **Craig Kirkwood** explains how.

In the early days of computing, data processing was all about numbers and structured information. To store, retrieve and analyse that kind of information, the database became the original killer app. In fact it was the *only* app.

When information processing moved to the desktop and relational databases sprang up on every server, the need for a common tongue to interrogate structured data became obvious. The Structured Query Language (SQL) emerged out of necessity as the language of relational data. Regardless of its faults, SQL remains the lingua franca of databases today.

Unfortunately, the world doesn't consist only of structured, related units of information that can be neatly defined as currencies, dates, numbers or letters. It consists of rambling letters, instructions, shopping lists, moving images, colour photographs and the music of many instruments. And until now, there's been no simple way to create unity among these disparate media in order to store, present, transmit and display them. That's why extensible markup language (XML) is important: it is a blueprint for creating order out of analog chaos.

XML allows the structuring of data that doesn't conveniently fall into the categories easily defined in relational

databases. It's referred to as a syntax, or metalanguage, because it describes the rules of the language rather than the language itself. In other words, it's a set of agreed rules from which a language can be created for the specific uses of a particular enterprise or domain. If the momentum continues, it could well be the Babel Fish of information technology — the universal communications tool for a common tongue between applications.

Without such a standard, it will be impossible for computing to move forward with certainty. Without a common development platform, ecommerce and Web-based applications will remain a squabbling, dissonant cacophony. That standard platform is not an operating system (although a standard OS would be nice), but an agreed method by which information can be structured, packaged and transmitted, regardless of the operating system or the communications medium.

If XML is a metalanguage, actual languages or document type definitions (DTDs) that adhere to its syntax are required before it can be useful. Since it appears that XML is here to stay, the scramble is on to define DTDs for every industry and information type. The first one to acquire a critical mass of support will likely control the language for that

particular field, although it remains to be seen whether there is any substantial commercial benefit when achieving this leadership position.

The remainder of this article is a discussion of some of the major XML-based applications and how they are likely to affect the future of markup.

SMIL — you're online

One of the more interesting applications of XML is the Synchronised Multimedia Integration Language (SMIL, pronounced smile). SMIL is an attempt to create a language for the use of time-based media on the Web. It was first proposed at the end of 1995 but didn't get to World Wide Web Consortium (W3C) draft stage until some two years later. And it really wasn't until the release of the second draft (codenamed Boston) earlier this year that the proposal began to gather speed.

SMIL is not an entirely new concept. The Standard Generalised Markup Language (SGML) community proposed a language years ago called HyTime, but it was criticised as overly complex and was never widely adopted. Although it is less robust than HyTime, SMIL has the strength of RealNetworks, Microsoft and Netscape as authors, as well as those from related

industries such as interactive television and multimedia.

With RealNetworks' RealPlayer, Apple's QuickTime and Macromedia's Shockwave all jockeying for pole position in the race to dominate Web multimedia, support for SMIL may play a pivotal role in this process. Web companies have long recognised that standards and recommendations, not proprietary solutions, are what the development community wants to see and the key to owning the standard is to be active in its development.

In its current form, RealNetworks is the dominant player in SMIL, as four of the 14 editors of the draft are on the RealNetworks payroll. RealNetworks' G2 Player is the only commercial media streaming application to offer support for SMIL, although Macromedia has developed a G2 plug-in for its Dreamweaver product, which will allow support for SMIL.

Like XML, SMIL doesn't get down to data formats such as AVI or MOV, but plays the role of media choreographer,

defining how, where and when multimedia elements should appear. It also allows an author to synchronise audio and video with an event stream that can manipulate other layout elements. For example, authors can indicate where a clip should begin playing and where it should stop, where it should appear in the layout, and whether it should be launched in a separate window or just replace the current window. And significantly, multimedia objects can be played sequentially or concurrently.

The example in figure 1 is SMIL markup for a short presentation of several images from the town of Cherbourg, France, accompanied by a soundtrack. It makes use of a small Java applet called Soja to view the files and is a reasonable indication of the kind of things that are possible.

A quick look at these tags gives you an idea about the structure of SMIL.

```
<REGION ID="pic_quai" WIDTH="100"
HEIGHT="48" LEFT="26" TOP="14" />
```

In the line above, the region `pic_quai` is a variable defined by its size (height and width) and its location (left and top).

```
<IMG SRC="media/quai.jpg"
REGION="pic_quai" BEGIN="1.2s"/>
```

In this line, the source image (the JPEG file, `quai.jpg`) is to be displayed in the region defined above (`pic_quai`) but a delay is specified (1.2 seconds) before it should be displayed. This is the first of the three photographs shown in the screenshot below. In this case, no duration is defined implying it should remain on the screen.

```
<IMG SRC="media/abaye.jpg"
REGION="pic_abaye" BEGIN="1.6s"/>
```

In this line, the same format occurs but the second image is delayed by 1.6 seconds. The final image is delayed by two seconds.

Clearly, this is a makeshift, automatic slide presentation where images are presented sequentially with music and additional text.

When the applet is run, it concludes as shown below.



Figure 1

```
<SMIL>
<HEAD>
<LAYOUT>
<ROOT-LAYOUT WIDTH="431"
HEIGHT="334" BACKGROUND-
COLOR="#000066" />
<REGION ID="bg_region"
WIDTH="431" HEIGHT="334"
LEFT="0" TOP="0" BACKGROUND-
COLOR="#000066" />
<REGION ID="pic_quai"
WIDTH="100" HEIGHT="48"
LEFT="26" TOP="14" />
<REGION ID="pic_abaye"
WIDTH="100" HEIGHT="68"
LEFT="26" TOP="62" />
<REGION ID="pic_theatre"
WIDTH="100" HEIGHT="67"
LEFT="26" TOP="130" />
<REGION ID="txt_courtesy"
WIDTH="220" HEIGHT="48"
LEFT="126" TOP="14" />
<REGION ID="pic_map"
WIDTH="100" HEIGHT="101"
LEFT="250" TOP="180"
BACKGROUND-COLOR="#1699DA" />
<REGION ID="txt_thanks"
WIDTH="180" HEIGHT="60"
LEFT="80" TOP="220"
BACKGROUND-COLOR="#1699DA" />
</LAYOUT>
</HEAD>
<BODY>
<!-- SMIL in SMIL with SOJA -->
<REF SRC="cherbourg.smil"
REGION="bg_region"
DUR="8.159s" />
<PAR DUR="3">
<IMG SRC="media/fond.gif"
REGION="bg_region" />
<IMG SRC="media/quai.jpg"
REGION="pic_quai" BEGIN="1.2s"
FIT="slice" />
<IMG SRC="media/abaye.jpg"
REGION="pic_abaye"
BEGIN="1.6s" />
<IMG SRC="media/theatre.jpg"
REGION="pic_theatre"
BEGIN="2s" />
<A HREF="http://www.
ville-cherbourg.fr/"
SHOW="cherbourg">
<TEXT SRC="media/
courtesy.txt"
REGION="txt_courtesy"
BEGIN="2.5s" />
</a>
<IMG SRC="media/map.gif"
region="pic_map" />
<text src="media/thanks.txt"
region="txt_thanks"
begin="10s" />
</par>
</body>
</smil>
```

BizTalk

XML's real power will come from the money end of the Web. Ecommerce is what everyone is waiting for or has already waded into making mistakes. But in the commercial domain it is not innovation or technical superiority that is craved, but stability. Since XML is really a subset of its longstanding grandparent SGML, a bona fide ISO standard, it represents stability and longevity by default.

Perhaps the most dominant XML implementation to emerge from the ecommerce camp comes from Microsoft. Although started by Microsoft, BizTalk is (at least ostensibly) an independent community supported by vendors such as SAP and CommerceOne, and heavy-weight users such as Boeing and BP.

MicroGram Computers

VGA to Video Converter

High quality at an affordable price, this totally external unit does not require software drivers, hence, no software clashes. It supports up to 32 bit colour at resolution 1152 x 864 with a refresh rate of 130 Hz.



Cat. 3102 VGA to Video Converter \$479

Windows Terminal



This windows based terminal is suitable for both NT Terminal Server & Citrix Metaframe as well as being configurable for Unix hosts. It supports Microsoft's RDP and Citrix ICA3 protocols. In addition, it also emulates a number of standard terminals. Ports provided include a DB25 parallel port, two DB9 serial ports, two USB ports, VGA DB 15, PS/2 mouse & keyboard ports & audio in & out. It is used in conjunction with a standard monitor, keyboard & mouse.

Cat. 1214 Windows Terminal \$1299

Serial and TCP/IP Ethernet LAN terminals.

Cat. 1026 Serial Terminal 1152Kbps \$469

Cat. 1133 Serial Terminal 460Kbps \$489

Cat. 1104 TCP/IP Ethernet LAN Terminal \$499

Cat. 1134 TCP/IP Ethernet LAN Terminal with LFD \$519

Hot-Swap IDE RAID Array

Avoid downtime delays when your hard drive fails! This unit enables the user to replace the hard disk while the PC is operating and it automatically resynchronizes itself to full operation. The RAID unit fits into two continuous 5.25" bays and includes a controller and two removable frames. The array accepts two EIDE, Ultra DMA 66/33 or PIO 4 hard drives. The controller provides RAID Level 1 disk mirroring. It can also be used as an on-line hard drive copier.



Cat. 2806 HDD Hot Swap IDE RAID Disk Array \$1299

VGA Monitor Splitters

Splitter modules enable up to 8 monitors to simultaneously share the information of a host computer. The ideal way of providing multiple displays in training rooms, airports, stock rooms, clubs, etc.



Cat. 3070 Two Output \$269

Cat. 3055 Four Output \$336

Cat. 3056 Eight Output \$574

Web-Based Training from \$14.95 per month*

New courses now available! Including Windows 98, Quicken 98, Lotus Notes, Internet Tools (Netscape) and more courses on TCP / IP

A number of courses are "Microsoft Certified Professional - Approved Study Guides"

*Full details at www.tol.com.au

Now over 300 courses on offer

Dual Exhaust Fans



Two products to keep your computer and your hard drive cool! Dissipate heat with dual exhaust fans attached to a plenum to exhaust hot air from inside the computer. Reduce the possibility of data loss due to your HD overheating with dual fans attached to a ventilated face plate. It will effectively dissipate heat from the HDD & significantly lower internal temperatures.

Cat. 8564 Hard Drive Cooling Fans \$49

Cat. 8420 Dual Exhaust Fans \$45



SmartMedia Reader/Writer



A SmartMedia (as used with digital cameras) reader/writer which connects to the parallel port to allow fast transfer of your photos to your computer. The reader appears as another drive on your PC, just use Windows Explorer to copy the files.

Cat. 6603 SmartMedia Reader/Writer \$279

Fast Ethernet Media Converters



Convert from Fibre to MII (Media Independent Interface) or 100Base-TX. Available with SC or ST fibre connectors.

Cat. 11327 Ethernet MII to 100Mbps Fibre SC \$349

Cat. 11328 Ethernet MII to 100Mbps Fibre ST \$349

Cat. 11325 Ethernet 100Base-TX to Fibre SC \$359

Cat. 11326 Ethernet 100Base-TX to Fibre ST \$359

Mobile Racks



Removable storage modules are the perfect solution for protecting your valuable data.

Features include an easy pull-out handle, auto-close door design, LED indicators for power & hard disk drive as well as an internal cooling fan. Also available is a IDE hot-swap model.

Cat. 6610 Mobile Rack HDD Frame Kit IDE \$69

Cat. 6611 Mobile Rack In-Tray Box for IDE \$39

Cat. 6614 Mobile Rack HDD Frame Kit IDE Hot Swap \$159

Cat. 6615 Mobile Rack HDD Frame Kit IDE UATA 66 \$89

Cat. 6612 Mobile Rack HDD Frame Kit SCSI \$79

Cat. 6613 Mobile Rack HDD Frame Kit SCSI Wide \$129

Parallel Port EPROM Programmer

An EPROM programmer that connects to LPT 1, 2 or 3 and has a 32 pin ZIF socket. It will program 16K to 8M bit EPROMs without



adapters. Fully featured software accepts Binary-Intel/Extended Intel-Motorola S19/S28/S37 & Tektronix Hex formats. Optional adapters available.

Cat. No. 3159 Parallel Port EPROM Programmer \$399

Year 2000 BIOS Card

It's not too late!! All you have to do is plug it in! This card has it's own RTC & carries the NSTL "Compatibility Test" seal.



Cat. 3359 Year 2000 BIOS Card \$129

Printer Servers

There's no need for a computer just to operate as a printer server, or you can avoid slowing down a work station when a print job is running by installing this small print server. It connects directly to the printer and a UTP cable. Suitable for Windows 95, Windows NT, Novell, TCP/IP and Unix.

Cat. 11288 Printer Server 1 Parallel Port 10MB/s \$209

Also available, auto-sensing dual speed 10/100MB/s print servers.

Cat. 11312 Printer Server 1 Parallel Port 10/100MB/s \$289

Cat. 11293 Printer Server 3 Parallel Port 10/100MB/s \$399

PS/2 Multi-PC Controller 2 Way

This sophisticated controller allows one keyboard, monitor and mouse to control two PC's. Keyboard, monitor (DOC2), and mouse emulators allow boot up of all computers regardless of switch position.



Cat. 11613 PS2 Multi-PC Controller 2 Way \$319

E & OE All prices include sales tax MICROGRAM 1299

Online catalogue & shop at www.mgram.com.au

Phone: (02) 4389 8444

sales@mgram.com.au

info@mgram.com.au

Fax: (02) 4389 8388

Dealer Enquiries
Welcome

Australia-Wide Express Courier (To 3kg) \$10

We welcome Mastercard VISA Amex
Unit 1, 14 Bon Mace Close, Berkeley Vale NSW 2261

Web site:
www.mgram.com.au

FreeFax 1 800 625 777

Varmest Pty Ltd trading as MicroGram Computers ACN 003 062 100

FreeFax 1 800 625 777

Figure 2

```
<BIZTALK XMLNS="urn:schemas-
biztalk-org/biztalk-
0.81.xml">
  <ROUTE>
    <FROM LOCATIONID="11111111"
LOCATIONTYPE="DUNS" PROCESS="*"
ROUTE="*" HANDLE="45"/>
    <TO LOCATIONID="22222222"
LOCATIONTYPE="DUNS" PROCESS="*"
ROUTE="*" HANDLE="93"/>
  </ROUTE>
  <BODY>
    <PO XMLNS="urn:schemas-
biztalk-org:fabrikam-com/
PurchaseOrder">
      Purchase order body
document in XML data here
    </PO>
  </BODY>
</BIZTALK>
```

BizTalk is run like a developers club, complete with its own 11-page philosophy that is reminiscent of open source. According to the BizTalk philosophy, current methods of application integration (app glue) are clumsy, and the cost and complexity of integrating back-office systems such as Enterprise Resource Planning and inventory management places a strain on most companies. As e-commerce demands greater application integration between multiple trading partners at various levels, BizTalk's XML-based architecture may well be a practical solution. However, this relies on enough of those trading partners agreeing to adopt it.

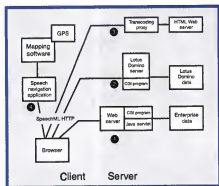
BizTalk is defined by a set of guidelines under the trademark BizTalk Framework, and at its core is the BizTalk Server. This is an application layer service, providing storage and manipulation of native XML data; querying capability on large sets of XML-based components; integration of disparate data sources into XML databases; execution of Document Object Model (DOM) applications using XML data types; and a standard interface to Web development languages such as JavaScript, VBScript and Java.

In the above example, a company called Fabrikam wishes to send a purchase order to a supplier. Fabrikam's unique company identifier is '11111111'. Its supplier's identifier is '22222222'. These identifiers are used by the BizTalk Framework infrastructure for routing and handling messages. The BizTalk Framework tags would look something like those shown in figure 2.

SpeechML

Earlier this year, IBM's alphaWorks Laboratory announced SpeechML, an XML DTD for conversational applications (those that interact with the user through spoken input and output). For example, conversational access may be enabled between a car, telephone, PDA or desktop PC, and information sources on the Net. Potentially, applications could include the same range of services and information now available visually through HTML.

The diagram below illustrates a generic speech markup application taken from IBM's own SpeechML demo. This can be downloaded from the alphaWorks site at <http://www.alphaworks.ibm.com/tech/sml/>, but it's not much use unless you have IBM's ViaVoice software running. On the left is a client device (car or PC, for example) where a conversational browser is running. On the right are three types of services running on three different servers. With some imagination, you could envisage that the servers are connected to the client by the Internet and are using a speech markup language to communicate with the client. Also shown is an application running locally on the client device using the same speech markup language to communicate with the browser.



Let's take a closer look. The example on the right is a food ordering system, which could be used in a restaurant or a McDonald's drive-through. If you have ViaVoice running and download the Java servlet McServlet, this example will actually run on a standard late-model (XML-compliant) browser. The bold text is spoken.

It's a little Orwellian without please and thank yous, but it is a genuinely practical example of the technology. Of course it's only markup and doesn't help with the hard work of actually generating and interpreting

the text. Like all XML applications, SpeechML only helps at the level of orchestration. Further technology is required to generate and interpret the speech.

In this case, the technology of choice is the Java Speech Markup Language (JSML) developed by Sun Microsystems in collaboration with Apple, AT&T, Dragon Systems (which makes ViaVoice's main competitor, Naturally Speaking) IBM, Novell, Philips and Texas Instruments. At the time of writing, JSML and its companion technology, Java Speech Grammar Format (JSGF), were only in beta stage. For more information try <http://java.sun.com/products/javamedia/speech/>.

The fact that IBM is a vast company with many departments in many countries around the world may account for a strange anomaly. Concurrent with its

SpeechML

Computer

```
<FORM ACTION="http://
localhost:8080/servlet/
McServlet/">
```

Please place your order.

```
<FIELD NAME="sandwich"
RULE="mcgrammar.sandwich">
  Sandwich is?
```

User

Sandwich is chicken sandwich

Computer

```
<FIELD NAME="drink"
RULE="mcgrammar.drink">
  Drink is?
</FIELD>
</FORM>
```

User

Drink is Coke

Computer

```
<BODY>
  Your order of one chicken
sandwich and one Coke will be
ready when you arrive in five
minutes. The total cost is
$5.75. Please go to the
nearest Cyber Food Restaurant
located at 100 Maple Street.
</BODY>
```




MAGnificent

"JAG" control is the revolutionary new rotary control with the circular patterned OSD menus.

Now, your screen can be adjusted to perfection with just a simple touch by using a single turnable knob with push button. You are able to easily control all the geometric settings (contrast, brightness, size, position, pincushion, rotation, trapezoid, parallelogram, degaussing, zoom, factory recall, and user mode) in an ergonomically correct position.

MAG monitors are dedicated to quality and customer service. We implement 100% Incoming Quality Control Policy using our own tightend specifications.

Not only do we thrive on quality and service, but also on innovation and technology. Today, all MAG monitors are conformed to the latest TCO standard. We provide two-year full warranty for all MAG monitors to give better service on top of highest quality products we supply.



EXCLUSIVE AUSTRALIAN & NZ DISTRIBUTORS

**Magtron Monitors
(Australia) Pty Ltd**

Unit B2 1-3 Rodborough Road
Frenchs Forest, NSW 2086
Ph (02) 9975 3727 Fax (02) 9975 4872
Internet: <http://www.magtron.com.au>



MAGTRON



NSW:	CX COMPUTING	(02) 9233 6288
	GLOBAL BUSINESS TECHNOLOGY	(02) 9644 3900
	MICRO PRO-MANLY	(02) 9977 6111
	SYNTAX SYSTEM	(02) 9905 5977
VIC:	DUAL TECHNOLOGIES	(03) 9887 7888
	GLOBAL BUSINESS TECHNOLOGY	(03) 9335 6088
	MICRO-PRO	(03) 9568 6911
	UNITRON COMPUTER	(03) 9819 6644
QLD:	COMPUTER ZONE	(07) 5527 3633

SA:	PC COMPUTERS	(08) 8332 6513
	OMINOLOGIC	(08) 8182 3041
TAS:	TOPS TASRAM	(0362) 348 144
	YALAKHOS	(0362) 270 414
WA:	VETTRAN INTL	(08) 9472 7997
NZ:	DORNWELL TECH.	(649) 624 3200
PNG:	HIGH TECH	(675) 325 7477

1990-3

SpeechML development, IBM is working with Lucent, Motorola and AT&T on another DTD called VoiceXML. Like BizTalk, but unlike SpeechML, VoiceXML is presented as a developer's organisation that combines the expertise of the different companies involved. According to the VoiceXML Forum, "IBM's Speech Markup Language technology gives the Forum and its specification additional technical strength and the benefit of IBM's experience in this area." These competing projects are typical of the way that many of the major IT companies are hedging their bets on XML applications.

SVG

The problem with all three current Web image formats (GIF, JPEG and PNG) is they are not scalable. They are bitmapped (raster) image formats and cannot be increased in size without a loss of quality. Vector-based file formats such as Adobe's Encapsulated PostScript format (EPS), on the other hand, can be scaled without loss, but file sizes are typically large and it's not suited to the Web as we currently know it. The only other options for vector Web images are proprietary formats such as Flash and QuickTime.

Scalable Vector Graphics (SVG) is the XML solution to graphics on the Web. It allows graphical objects to be grouped, styled, transformed and composited into previously rendered objects and boasts a swag of other features like nested transformations, clipping paths, alpha masks, filter effects, kerning, template objects, animation capability and, of course, extensibility. Since it's XML, it sits comfortably with other Web standards such as Cascading Style Sheets (CSS) and makes use of the CSS2 method of intelligent font matching and font synthesis. It is also compliant with the W3C DOM.

SVG could really make a difference. Being text-based, it offers reduced download times, allows search engines to index graphics and allows users to search for text within them. So, for example, you could search for a suburb or street name on a map. Map rendering could, in fact, be one of the most powerful uses.

In order to zoom in on a location on a Web-delivered map, a new image is sent from the server, which takes time and is inefficient. If the map was in SVG, the user could zoom in and out or pan across without asking the server for new data. SVG also offers high-resolution printing. That alone could totally change Web imaging, as the gulf between offset-

printable graphics and Web graphics is huge using current formats.

SVG contains six predefined objects: rectangles, circles, ellipses, polylines, polygons and lines. To create an image other than those basic shapes, you use the <PATH> element, which functions like freehand drawing. You can then add other images or text using the <TEXT> element. The example in Figure 3, taken from the SVG W3C working draft, will draw a blue circle with a red outline. The usual text string 'Hello World' will appear inside the circle.

This won't work on current model browsers, but you can experiment with SVG using some freely available tools. IBM's prototype Java-based viewer is available from the alphaWorks site at <http://www.alphaWorks.ibm.com/>. Alternatively, the CSIRO has developed an SVG viewer, available from <http://sis.cmis.csiro.au/svg/>. In both cases, you'll need to download the Java 2 package and IBM's XML Parser for Java (XML4J) unless you already have them installed. The CSIRO site also has some impressive samples of what can be achieved using SVG in a browser-friendly format as shown below.



If you want to try your hand at creating your own SVG files, the excellent shareware Mayura Draw (formerly PageDraw) has a 'save as SVG' option in its latest beta release 3.6, available from <http://www.mayura.com/>. Adobe also has plans to include SVG in future versions of Photoshop, Illustrator and GoLive. It has also pledged a browser plug-in for Netscape Navigator and Internet Explorer browsers as well as a 'microviewer' for clients such as laptops and PDAs.

Other XML applications

The applications described above are just a few of what's currently available and more are appearing all the time. Novell has developed its own e-commerce solution compatible with its Novell Directory Services (NDS) called DirML; Vignette

Figure 3

```
<?XML VERSION="1.0"?>
<!DOCTYPE SVG PUBLIC "-//W3C//DTD SVG July 1999//EN"
"http://www.w3.org/Graphics/SVG/svg-19990706.dtd">
<SVG WIDTH="4in"
HEIGHT="3in">
  <DESC>This is a blue circle
  with a red outline
  </DESC>
  <G>
    <CIRCLE STYLE="fill: blue;
stroke: red" CX="200"
CY="200" R="100"/>
    <TEXT X=".5in" Y="2in">Hello
World</TEXT>
  </G>
</SVG>
```

Corporation has joined with Adobe, Microsoft, CNet, Sun and others to develop the Internet Content Exchange (ICE) to enable syndicated publishing networks; and there are already dozens, if not hundreds, of specialist applications like MusicML (see our Web-only sidebar, 'MusicML: Markup for musicians', at <http://apcmag.com/features/9912/xml>), MathsML and oecXML (for architecture, engineering and construction). Many organisations are realising that there is no reason why they can't produce their own DTDs for their own purposes. It's quite possible, for example, to establish one DTD to interface with clients and another for back-end systems.

The future

XML has thankfully been fairly static since an official W3C recommendation was made in February 1998, and there has been little agitation for change. This is good news for developers and a positive sign for the future of the language, but XML is not in itself the final solution to data processing. According to Nick Carr, CEO of Sydney-based SGML consultancy Allette Systems, "It's all about syntax over semantics: XML means everyone knows how to process the data but the semantics of information are as dissonant as they've always been. We now have a common language to interchange data but we still don't know what to do with it."

Craig Kirkwood is the manager of the XML/SGML Asia Pacific conference and a senior technical writer at IBM.

Configure your pc

@www.digitalstar.com.au

Performance P-450S

Intel® Pentium®III Processor 450MHz

- Genuine Intel® SR440BX Mainboard
- ATX Mid-Tower Case
- 64MB SDRAM 100 MHz
- 8.4 GB Hard Disk & 1.44MB Floppy
- 17" Digital Monitor(0.27dp, 16"V.L.s.)
- 16Mb nVidia TNT 128-bit graphics
- Creative™ Sound Blaster™ PCI 64
- 44 x EIDE CD-ROM Drive
- 104-Key Keyboard & Logitech Mouse
- 56K V.90 Data/Fax Modem
- Microsoft® Windows® 98
- SmartSuite Millennium-Year 2000 ready Lotus 1-2-3, WordPro, Approach, etc.
- Anti-Virus & Internet Starter Kit
- 3-Year Limited Warranty*

\$1849 or **\$19/w***

UPGRADE OPTIONS:

- MMI 3-Year On Site Warranty*.....\$110
- P-500S 500MHz / 128Mb \$2099

Power P-500E

Intel® Pentium®III Processor 500MHz

- Intel® 440BX AGPset Mainboard
- ATX Mid-Tower Case
- 64MB SDRAM 100 MHz
- 13GB Ultra DMA/66 Hard Disk
- 17" Digital Monitor(0.27dp, 16"V.L.s.)
- 32MB Creative™ 3D Blaster Savage4
- Creative™ MPEG-1 Decoder + TV Out
- 6X DVD-ROM Drive
- Creative™ Vibre PCI 128 Sound Card
- 104-Key Keyboard & Logitech Mouse
- 56K V.90 Data/Fax Modem
- Microsoft® Windows® 98
- SmartSuite Millennium-Year 2000 ready Lotus 1-2-3, WordPro, Approach, etc.
- 3-Year Limited Warranty*

\$2199 or **\$23/w***

UPGRADE OPTIONS:

- MMI 3-Year On Site Warranty*.....\$120
- P-550E 500MHz / 128Mb.....\$2589

PowerNote 6133-466T

Intel® Celeron® Processor 466MHz

- 12.1" SVGA Active TFT LCD 800 x 600
- 128KB L2 cache
- 64MB SDRAM Expandable to 160MB
- 128-bit 4Mb graphics accelerator
- 4.8GB Ultra DMA Hard Disk
- 24X (max.) CD-ROM drive
- Built-in 1.44 MB Floppy Drive
- 16-bit stereo audio system
- One type III or Two type II PCMCIA
- 56K V.90 PCMCIA Fax/Modem
- Microsoft® Windows® 98
- 1 Year Limited Warranty*

\$2899 or **\$27/w***

UPGRADE OPTIONS:

- MMI 3-Year Extended Warranty*. \$189
- Canon BJ200 Portable Printer..... \$349

PowerNote 7300-366T

Intel® Pentium®II Processor 366MHz

Based on Award Winning ASUS L7300

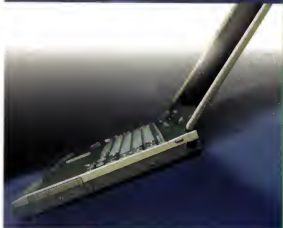
All-in-one Notebook Featuring:

- 13.3" XGA Active TFT LCD 1024 x 768
- 512KB L2 cache, Intel® 440BX AGPset
- 64MB SDRAM Expandable to 160MB
- 128-bit 4Mb graphics accelerator
- 6.4GB Ultra DMA Hard Disk
- 24X (max.) CD-ROM drive
- Built-in 1.44 MB Floppy Drive
- PCI 3D audio stereo system
- Microsoft® Windows® 98
- 1 Year Limited Warranty*

\$3449 or **\$33/w***

UPGRADE OPTIONS:

- 56K V.90 PCMCIA Fax/Modem.....\$139
- PCMCIA Combo 56K+10BaseT.....\$299



* Prices and specifications subject to change without notice. Prices include tax but exclude freight, handling and insurance. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. All brands and product names are trademarks of their respective companies. Product pictures for illustrative purpose only. All Digital Star Desktop PC comes with a 3-Year Limited Return to Base Warranty. First two-year provide parts and labour warranty. Years 3 provide labour warranty only. An

upgrade option 1/3 years on-site warranty, terms and conditions. Rentals are based on a 30 month term and subject to flexible terms and conditions.

**All DIGITALSTAR PCs have successfully passed the NIST YMARK2000 Test, but DIGITALSTAR can not be responsible for third party software that improperly process dates. Internet Free Access subject to ISP terms and conditions.

DIGITALSTAR

1800800628
www.digitalstar.com.au

Auburn Superstore: 15 Newton St. Sth • Ph: (02)97482915 • Fax: (02)97379326
North Sydney: 13/177 Pacific Hwy • Ph: (02)99292868 • Fax: (02)99292865
Service: 8/191 Parramatta Rd, Auburn • Ph: (02)97379744 • Fax: (02)97379326

LIKE SANS THROUGH



THE HOUR GLASS

Storage Area Networks (SANs) promise continuous access to data, centralised management and the flexible provision of storage for enterprise-scale information systems. But despite emerging open standards, vendor/SAN lock-ins appear inevitable for some time to come. **Stephen Withers** explains.

Although SANs has been one of 1999's buzzwords, it is much more than a marketing catchcry. Rather, it represents a major change in the way shared storage devices are being connected to the rest of an IT system.

SANs are essentially high-speed, special-purpose networks (or subnetworks) that interconnect different data storage devices with associated data servers on behalf of a larger network of users. They are typically a part of the overall computing resources of a networked enterprise, supporting disk mirroring, backup and restoration; data archiving and retrieval; data migration

between storage devices; and data sharing among different servers in a network.

The SAN acronym is actually somewhat forced. While the 'A' in LAN, MAN and WAN all refer to geographical areas, it refers to a functional or logical area in SAN.

The SAN concept is best understood by first considering the evolution of methods used to attach storage devices to computers. The simplest case is local storage, in which the storage device is attached directly to the computer. This method yields maximum performance from the particular subsystems used because the device is not being shared. Any bottlenecks can be attributed

to the transfer rate of the disk or other device, the controller, the bus speed of the computer or similar things. The inability to share the data is the major disadvantage when using this type of solution.

In the case of local storage it is important that an appropriate backup regime is implemented. Expanding disk capacity is fairly easy — just install another disk on the IDE or SCSI chain. If a drive has to be replaced, it is necessary to back up all the data, install the new drive, reload the operating system and software, and then restore the backed-up data. This process impacts only on that computer's user.

Server and network storage

When a storage device is directly attached to a computer that acts as a server, it is referred to as a server storage device. Computers on the same network can make file read or write requests to the server, and information can be shared. Network bandwidth may cause a bottleneck, since high-performance disk drives have transfer rates measured in tens of megabytes per second (Mbps). However, careful network design and the selection of faster networking technologies can help you overcome this problem.

Backup can be centralised, which means it is more likely to be done regularly. Economies of scale is a factor here — the price per unit of storage falls as capacity increases. In other words, while you may need to fit an 8G drive in a standalone PC, it is quite possible to support 10 similar users with less than 80G of server space due to the presence of shared files.

Increasing the amount of space on a server is theoretically the same as upgrading a PC, but downtime affects all users and must often be scheduled for evenings or weekends. This is a particular problem in a continuous operating environment, and may involve commissioning a new, higher-specification server and switching users to it instead of upgrading the old one.

Network-attached storage essentially puts storage devices on the LAN where they can be accessed by one or more servers. The main problem with this approach is that it increases the amount of network traffic (as the data flows from the storage device to the server and then from the server to the PC along the same cable). Separate cable segments can be used to overcome this.

SAN storage

The relationship of a SAN storage device to a server is similar to the relationship between an individual PC and the server. Indeed, one vendor (Gadzoox) refers to SAN as 'the network behind the server'. Essentially, SANs provide a second, separate, and high-performance network to connect storage devices and servers.

This approach has several advantages over server-attached storage. For starters, the advantages of economies of scale are further increased, and apart from the advantages of even larger drives, it's possible to aggregate the headroom on several servers. Instead of allowing, say, 10G of space on each of 10 servers, you could buy 40G of spare

capacity now, and purchase another drive later. This approach reduces capital costs and makes it easier to take advantage of falling prices as the technology continues to improve. Additionally, it is not necessary for the servers to be homogenous; a SAN can service multiple hardware and software platforms.

Because servers now deal with logical devices rather than physical drives, the amount of disk space available to a server can be increased while it is running, rather than having to take the server down as is the case with physical drives. This is one of the key ideas of Hewlett-Packard's 'storage grid' concept (other vendors have similar ideas). Just as you can draw power from a wall socket as and when you need it, storage should be on tap without the complexity and interruption to service when installing new hardware.

The use of SANs means that storage management can be separated from service management. For example, an email administrator can concentrate on providing email services to users rather than worrying whether any particular server is running out of disk space. The amount of space used is still a consideration (does the business benefit gained from holding all that data exceed the cost of storing it?), but the threat of a service interruption caused by a full disk practically disappears. A similar situation applies to the administrators of an organisation's Web site, accounting system, production system and so on. The nature of SANs also opens the possibility of outsourcing an organisation's storage requirements, even if the rest of the IT operation is run internally.

Storage management

In any case, storage management is a task in itself as the amount of data stored within organisations continues to grow. In addition to trying to provide good customer service, efforts to understand customers mean that what once would have been considered out-of-date information is now kept online in the hope of identifying some characteristic or pattern that can be exploited.

Storage vendor EMC's president and CEO Michael Ruetters has been quoted as saying, "Every time someone goes on the Internet, they leave fingerprints, and somebody's collecting all those fingerprints."

Companies such as Amazon.com are taking this to a more sophisticated level based on more — a lot more — data. And all this data needs to be stored in the most efficient manner possible.

Forrester Research recently found that while the storage requirements of traditional businesses doubles every year, over one-third of retailers doing business over the Web expect a ten-fold increase in capacity in just two years. So storage is big business, and SANs are shaping up to take a big chunk of it. Research company IDC predicts a \$US6 billion SAN market by 2001, rising to nearly \$US17 billion (80% of the total storage market) by 2003.

SANs increase the complexity of an IT system, but paradoxically this can also increase its reliability. While complexity may increase the capital cost, improved reliability and manageability can reduce the total cost of ownership, particularly in environments where high availability is essential. Some of these factors are particularly pertinent to data backup.

The marketplace

The SAN marketplace resembles a collection of jigsaws, each with pieces missing. Vendors look to various partners (often small, specialist companies offering one particular product such as Fibre Channel switches) to provide the missing pieces, so there is a degree of interchangeability. An example of such specialist companies is switch-maker Brocade.

As yet, interoperability is limited, and will remain so until relevant standards emerge. Various vendors are doing their own testing, providing buyers with particular combinations of products that work together. EMC has a petabyte (approximately 1,000 terabytes) of storage dedicated to its own interoperability-

testing efforts. Hewlett-Packard offers a 'Tachyon Tested' logo for products that have passed interoperability testing with its Tachyon PCI Fibre Channel host adapters.

Despite the emerging standards, vendor/SAN lock-ins are inevitable for a while, according to Gartner Group analyst Nick Allen. Gartner predicts total interoperability will be limited to vendor partnerships until at least 2005.

A selection of companies active in the SAN area are discussed in 'Some SAN vendors' on page 142. This overview should provide an idea of the importance of interoperability, standards and partnerships issues in a burgeoning field where it is literally impossible to dominate.

Some SAN vendors

Compaq

Thanks to its acquisition of Digital, Compaq is perhaps the closest to having its own complete SAN product line — from cables to servers to services. Between them, Compaq and Digital shipped more terabytes of storage in 1998 than any other vendor. As an example of its SAN activities, Compaq provides Fibre Channel support for some of its storage arrays, and OEM switches and software to replicate data to remote sites at 100Mbps.

EMC

While EMC focuses on the 20% of companies that store 80% of the data, according to president and CEO Michael Ruetters, that doesn't only include the world's largest enterprises. EMC is well aware that Internet-based companies have storage requirements much larger than their size on other measures would suggest. These include application service providers, which EMC views as a virtual distribution channel in the sense that they buy EMC systems and then sell storage on those systems to smaller companies.

EMC was a major player in the high end of the SAN market before it purchased Data General and its CLARiON products to obtain an instant mid-range product line. EMC products already included storage arrays, switch and management software, and the company also offered professional services to companies interested in implementing SANs.

Companies such as Unisys and Dell have been selling CLARiON products; conversely, CLARiON systems incorporate components from other vendors, such as Emulex host adaptors, Legato backup software and StorageTek tape libraries.

Emulex

Known also for its printer servers and other LAN products, Emulex has a Fibre Channel range it sells directly, through distributors and to OEMs, including host adaptors, an adaptor for direct attach storage, and a managed digital retiming hub.

Exabyte

As you know, backup is important if you are going to store huge amounts of data in one place. Exabyte's NetStorM (Network

Storage Management) architecture includes Arrowhead tape libraries, NetStorM management software, and Fibre Channel components and backup software from its partners. Unlike several companies in the SAN market, Exabyte targets medium-sized companies.

Hewlett-Packard

Hewlett-Packard offers disk arrays, Fibre Channel switches, management software, and consulting and support services. The company previously sold EMC storage systems, but that arrangement ended mid-year when Hewlett-Packard switched to an OEM arrangement with HDS.

Hitachi Data Systems

Hitachi Data Systems (HDS) operates in coalition with several other vendors, including Ancor (switches), Emulex (host adaptors) and Gadzoox (hubs and software), with HDS providing its own Freedom Storage systems in various capacities and delivering planning and implementation services. HDS recently changed its strategy from direct sales only to include a distribution channel through resellers and value-added distributors. The aim is to add the NT and Unix markets to its traditional mainframe customers.

IBM

IBM sells a mixture of its own products and those from other companies.

The Enterprise System Server (codenamed Shark) brings mainframe technologies to the Windows NT and Unix world with features such as parallel access, which means that when multiple users request the same data, they don't have to wait for their turn to be served. The product has a disk capacity of 420G to 11.2T. Previously, IBM has sold Storage Technology products and has taken around 22% of the global open systems storage market, compared with EMC's 35%. IBM recently announced plans to purchase Mylex, a manufacturer of controllers and adaptors used in storage systems.

Pathlight Technology

Included here as an example of a specialised product from a small company, Pathlight's

SAN Router provides a way to integrate Fibre Channel hosts and SCSI devices without the problems associated with Fibre Channel Arbitrated Loop products, such as inappropriate streams of LIPs (Loop Initialisation Primitives, which are involved in the process of selecting addresses for each device) and device reset issues. SAN Router can be configured with two single-ended or differential SCSI ports and one Fibre Channel port, and is available in rackmount or desktop versions. Management software is included. SAN Router is incorporated in IBM's SAN Data Gateway product.

StorageTek

One of the leading suppliers of disk arrays as well as tape drives and libraries, StorageTek bundles management software from a variety of sources including Legato, Veritas and Computer Associates.

TruSAN Networks

TrueSAN claims its 6000FC series storage system can provide 2000Mbps of useable bandwidth over one large segment.

Veritas

Veritas is a major supplier of storage management software. Earlier this year, Veritas merged with the storage management group of Seagate Software in a \$US2.7 billion deal. Veritas was strong in the Unix market, Seagate in Windows NT. The company is progressively adding to its current support for SAN-related features in its disk management, backup, HSM (hierarchical storage management), clustering, storage resource management and application integrated storage management products. (That last category integrates various Veritas products to assist in the management of specific applications such as Oracle, Sybase and SAP.)

Vixel

Vixel's range of Fibre Channel products includes managed and unmanaged hubs, a switch, transceivers and management software. The company's seven-port hub is being sold through IBM's sales and distribution channels as an IBM-branded product.

One of the problems with backing up servers across a LAN is that it is easy to saturate the network. It is possible to back up every server locally, but it distributes operator intervention. While it is important to manage a network-wide backup, experience shows that people aren't as diligent as they should be when their only involvement in the administration of the network is to change a cartridge when they arrive at the office every morning. When they are absent from the office an appointed deputy is even more likely to forget. SANs provide much higher bandwidth and as a result a SAN-based centralised backup is unlikely to cause saturation.

Further, redundant storage means full availability during backup; this works by using drive mirroring in the storage units. When it is time to do a backup, one drive is logically disconnected from its twin. The disconnected drive is backed up, while the other continues to service the servers. When the backup is complete, the drive is reconnected and automatically re-synchronised with its twin. This approach is very useful for systems that must operate around the clock, or for those where the volume of data has grown to the point where the time needed to do a backup exceeds the available downtime.

The need for high availability implies the use of RAID (Redundant Array of Independent [Inexpensive] Disks), but it is not mandatory. JBOD (Just a Bunch Of Disks) is an alternative for data that is frequently used (and therefore must be kept online) but not mission critical, such as

local news servers' files. Other devices such as optical jukeboxes can also be attached to a SAN.

The network technologies used in SANs means that effectiveness is not limited to a single building. In other words, a single device farm could provide storage for servers in multiple premises, or devices could be distributed to provide data security in case of a major fire or other interruption to operations at an individual site.

IDC predicts a \$US6 billion SAN market by 2001, rising to nearly \$US17 billion by 2003.

Reliability and data recovery are always important, but the trend towards end-to-end e-business means that data increasingly exists only within computer systems — it cannot be recaptured from paper systems such as timesheets, order forms or shipping notes. In such an environment, the purchase of a more expensive system that can deliver on promises of higher reliability may be a prudent move.

SAN infrastructure

Fibre Channel is the most widely used network technology within SANs, providing a 120Mbps interface that can interconnect hundreds of devices over distances up to 10km — a far cry from SCSI's eight devices and a few metres. An increase in bandwidth to 480Mbps, a four-fold increase in throughput, will happen soon.

Disk arrays and tape libraries are connected to servers via hubs or switches. If devices are connected via a hub, the bandwidth must be shared. When a switch is used instead, the full 120Mbps bandwidth is available to each communicating pair of devices (much as hubs and switches can be used to build an Ethernet). A switched fabric also provides higher availability, as long as there is more than one route between each server and storage device.

One of the problems with Fibre Channel is the lack of a common management information base that allows one manufacturer's software to manage another's hardware. However, this situation is set to improve — the Internet Engineering Task Force is expected to ratify a proposal from the FibreAlliance consortium before the end of this year. Also, broader interoperability and standardisation issues are being addressed by the Storage Networking Industry Association.

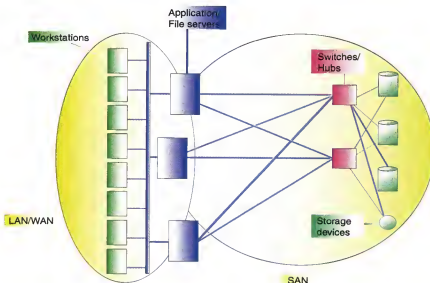
While Fibre Channel predominates, it is not the only technology that can be used in a SAN. ATM (Asynchronous Transfer Mode) can also be applied. ATM offers a variety of speeds from 34Mbps to 2.4Gbps (with 10Gbps being planned) over fibre-optic and, at lower speeds, twisted pair cables. Its main advantage over Fibre Channel is that it has no distance limitation — a connection can be across a room using a simple cable connection or across the world via a telco's ATM service.

Its main proponent in the SAN arena is UK-based Storage Area Networks' DiskLink product. DiskLink allows connections between SCSI devices and hosts over ATM. Multiple hosts can be interconnected with multiple storage devices.

For enterprise-scale information systems, SANs promise continuous access to data (regardless of individual failures), centralised management and the flexible provision of storage. As the costs of downtime rise, the investment necessary to implement SANs will be increasingly justifiable even at smaller sites — especially once standardisation reduces those implementation costs.

It's important to remember that SANs by themselves do not automatically provide all the benefits discussed, such as backups that do not interrupt the normal operation of application servers. Instead, it is an enabling technology for the architectures and products that do deliver them. ■

A basic SAN architecture



*Award winning monitors
at an affordable price*



**CTX SuperStar™ power- management savings!
Exceeds EPA Energy Star specs by more than 80%**

"..Best Buy.."

**"..dollar for dollar, specification for specification, the best value for money.."
- PC World Magazine**

**"..Highly Recommended Award.."
-Australian Personal Computer**



Model	VL500	VL700	PR711 (Trinitron®)	VL950	EX1200
CRT Size/Viewable	15"/13.8"	17"/15.7"	17"/16"	19"/18"	21"/20"
Dot Pitch (mm)	0.28	0.28	0.25	0.26	0.26
Horiz. Scan(KHz)	30-70	30-70	30-95	30-95	30-95
Max Resolution	1280x1024/60Hz	1280x1024/60Hz	1600x1200/75Hz	1600x1200/75Hz	1600x1200/75Hz

Trinitron® is a registered trademark of SONY Corporation



underwritten by
American Home Insurance

Exclusive distributor
Ocean Office Automation Pty. Ltd.

It works for you...



Ocean Office Automation, established in Australia in 1992, is recognized as one of the leading local PC manufacturer. We listen to our customers and we know what is important to you. It is this philosophy that makes the name Octek synonymous with reliability and consistency.

At Ocean, we believe that your PC should work for you, not the other way round. At Ocean, we believe in helping you reduce your TCO (Total Cost of Ownership) - lower maintenance - lower downtime - easier upgrades - easier integration - better support - more value for money.

ENTRY LEVEL SERVER

INTEL® PENTIUM® III PROCESSOR 500MHz

- Intel® T440BX Server Board
- Integrated Graphics
- Integrated Intel® PRO/100+ NIC
- Intel® Server Control
- Emergency Management Port
- System Management Instrumentation
- 128MB 100MHz SDRAM with ECC
- Quantum 7GB Atlas IV SCSI-2/LVD HDD
- Sony 40x IDE CD-ROM Drive
- Sony 1.44MB FDD
- Full Tower ATX Chassis
- Microsoft Intellimouse
- 15" Monitor 1280 x 1024

EXECUTIVE SYSTEM

INTEL® PENTIUM® III PROCESSOR 500MHz

- 64MB 100MHz SDRAM
- nVidia Riva 128 8MB AGP Graphics
- Intel® PRO/100+ NIC
- Internal 56K Data/Fax/Modem
- Aureal Vortex 1 A3D Sound Card with Speakers
- Quantum 6.4GB Ultra ATA/66 HDD
- Sony 40x CD-ROM
- Medium Tower Chassis
- Microsoft Intellimouse
- Microsoft Works Suite 99
- Windows 98 with PLUS
- CTX 17" Monitor 1280 x 1024

OFFICE TERMINAL

INTEL® CELERON™ PROCESSOR 466MHz

- 64MB 100MHz SDRAM
- Quantum 6.4GB Ultra ATA/66 HDD
- S3 8MB AGP Graphics
- Intel® PRO/100+ NIC
- Sony 40x CD-ROM
- Minitor Chassis
- Microsoft Intellimouse
- Microsoft Works Suite 99
- Windows 98 with PLUS
- CTX 15" Monitor 1280 x 1024

POWER GAMES SYSTEM

INTEL® PENTIUM® III PROCESSOR 500MHz

- 64MB 100MHz SDRAM
- Quantum 10GB Ultra ATA/66 HDD
- nVidia TNT2 32MB AGP Graphics
- Internal 56K Data/Fax/Modem
- Sony 6x/32x DVD-ROM
- Aureal Vortex2 SuperQuad Digital Soundcard with A3D
- Altec Lansing ACS33 Sub-Woofer Speakers
- Medium Tower Chassis
- Microsoft Intellimouse
- Microsoft Works Suite 99
- Windows 98 with PLUS
- 17" Monitor 1280 x 1024

\$3,290* or \$30 per week**

\$2,450* or \$23 per week**

\$1,690* or \$16 per week**

\$2,850* or \$27 per week**

3 year limited onsite warranty on all systems underwritten by American Home Insurance



NEW TECHNOLOGY FOR THE NEW MILLENNIUM

Manufactured by
Ocean Office Automation Pty. Ltd.

For more information and custom-configuration,
please call or visit our new web site,

www.octek.com.au

For the nearest dealer please call

13 22 86

Quality
Endorsed
Company

180 9002 Lic #184
Standard Australia



*Prices and specifications are subject to change without notice. The picture shown may not represent all of the different models. **Prices are based on 36 months rental and operating lease. Rental and operating leases are only available to business customers. First approval for up to \$20,000. Conditions apply. The Intel Inside Logo and Pentium are registered trademarks of Intel Corporation and MMIO and Celeron are trademarks of Intel Corporation.

Tired of small "no name" brands you can't rely on?
Or huge internationals that simply don't care?
There is a better way...

Viewmaster™

BY HALLMARK

Viewmaster™ Computers have been proudly manufactured for Australian homes and businesses since 1992 - in fact well over 100,000 of them have been produced over the years! And as one of Australia's oldest and most experienced PC manufacturers we know the long term value of quality components - that's why Viewmaster™ PCs use only genuine Intel® processors.



The right solution for
E-Business Productivity

Equipped with the leading edge of Intel® Pentium® III processors you'll have more than enough power to handle the toughest software applications from latest games to the large business databases...

And we are very proud of the latest addition to our label - announcing the Viewmaster™ Intel® Validated Server range. Built to Intel's® strict validated server recipe, every Viewmaster™ server has been comprehensively tested and complies with Intel® and international industry standards for Server Class products. Easy to manage, scalable business solutions with greater performance for your dollar.

Exceptional quality, exceptional performance and exceptional value - the Viewmaster™ PC and Intel® Validated Server range are the new intelligent, tailored choice.

- Available with Intel® Pentium® III processor or Intel® Pentium III Xeon™ processor
- Single/Multi-Processor Configurations
- Fault Tolerant Storage & RAID Solutions
- Redundant Power Supplies
- Intel® System Management Software
- Advanced Monitoring & Fault Detection
- Chassis or Rack Solutions
- Full Y2K Compliance Warranty
- 3 Year Warranty with On Site Options

from
\$4999 INC TAX

For more information about products or services

MELBOURNE	Ph: (03) 9540 8555	Fax: (03) 9540 8989
SYDNEY	Ph: (02) 9748 8811	Fax: (02) 9748 8866
ADELAIDE	Ph: (08) 8340 3740	Fax: (08) 8340 3745
DARWIN	Ph: (08) 8948 4451	Fax: (08) 8948 4450

<http://www.hallmark.com.au> or Email: sales@hallmark.com.au



HALLMARK
COMPUTER
INTERNATIONAL

Workshop

147 WORKSHOP/DECEMBER 1999

CONTENTS

Welcome to Workshop. This section is dedicated to bringing you all manner of tips, interesting information and do-it-yourself tutorials. Within these pages you will find useful shareware, informative operating system-specific columns and in-depth programming tutorials.

All files mentioned in Workshop can be found on apcmag.cd or downloaded from our Web site at <http://apcmag.com/>. You can join one of our online discussion forums to discuss technical issues or to voice your opinion on any related topic.

Workshop is a reader-input section. Please email your ideas, comments or criticisms to workshop@acp.com.au, or send snail mail to APC Workshop, PO Box 4088, Sydney NSW 1028.

A full archive of Workshop articles can be found online at <http://apcmag.com/workshop/>.

Andrew Colley, Workshop coordinator

Tech Talk

Technobabble discusses multiprocessing and its significance for common computing tasks in the future, and **Step by Step** explains how multiple PCs can share an Internet connection.

Operating Systems

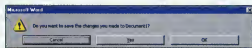
The **Windows 98** column discusses recent advances in Windows 98's multimedia capabilities, while **OS/2** teaches you how to jazz up your desktop. The **Mac OS** column gives you a few tips and tricks to help you make the most of some newer disk formats and the **Linux** column teaches you how to duplicate a Linux installation.

Programming

The **Simple C++** column explains how to use classes in object-orientated programming, and **Java** tells you how to use checkboxes and radio buttons in your applets.

Bug of the Month

This month's bug comes from Marlene Jerlitschka. Marlene had something of a mishap while installing Service Release 1 for Office 97. When she tries to quit a program, Marlene now gets this:



It turns out that "Cancel" means save; "Yes" means No; and "OK" will cancel the request. And they say that computers can be confusing!

Marlene also asked, "Do you have a suggestion for how I can fix it?"

There is one tried and trusted DOS command you should recognise:

FORMAT C:

But I wouldn't recommend using it unless you don't mind wiping your hard drive and starting again.

Win! Win! Win!

Workshop is always on the lookout for the most interesting, strange, funny or downright weird software bugs you can find. These include code snippets, features that function poorly, or things that crash a particular application. Anything and everything buggy deserves mention.

Send us your favourite bug via email to bugs@acp.com.au or snail mail to APC Bug of the Month, PO Box 4088, Sydney NSW 1028, and you'll be in the running to win a software prize. Please send screen captures, example code listings or detailed instructions to trigger a bug in an application, as appropriate for your entry.

The winner's name, along with details of the bug, will appear in the Bug of the Month column in the February edition of APC. So start hunting!

Michael Smith

Pocketbooks

The first release of the **Y2K Emergency Pocketbook** was a sell-out, but this essential toolkit, designed to help home and small business users combat the millennium bug, is available once again. Inside you'll find an in-depth guide to contingency planning, plus a step-by-step rundown of what to do if your system fails in January.

It is not too late to act. Buy the **Y2K Emergency Pocketbook** now and keep it handy when the clock strikes midnight.



If there is a specific topic you would like to see covered in the pocketbook format, send your suggestions to pocketbooks@acp.com.au.

apcmag.pocketbook

Fancy writing for Workshop?

Each month, Workshop aims to bring APC readers detailed information on how to get the most out of their computing experience. We're constantly looking for new writers and suggestions on areas you want to see covered. If you're interested in writing for Workshop, please send a brief email outlining your areas of expertise, topics you'd be interested in writing about and samples of your writing to apc@acp.com.au.

AUSTRALIA'S MOST WANTED

ALPN 076 874 112

39 Speeding Records in the last 15 Months

Pioneer 2000 SOHO PC

Celeron 466:	\$1770
Celeron 500	\$1880
Pentium III 500:	\$1999
Pentium III 550:	\$2290

Supermicro SBA BX M/B
64 M PC100 RAM
QUANTUM 10.2 GB HDD IDE
Diamond V770 16M AGP VGA
Creative Vibra 128 sound card
Macase ATX Midi Tower
480W SPEAKER
MITSUBISHI 1.44M FDD
MITSUBISHI 50X CDROM
MITSUBISHI 15" Monitor
MITSUBISHI K/B, Mouse, Win 98,

Pioneer 2000 POWER PC

Pentium III 500:	\$2760
Pentium III 550:	\$2990
Pentium III 600:	\$3230
AMD K7 650:	\$3420

Supermicro SBA BX M/B(K7-M5I)
128 M PC100 RAM
QUANTUM 13.1 GB HDD IDE
MATROX G400 32M AGP DUAL HEAD
Creative SB LIVE value digital card
Macase ATX Midi Tower
600W SubWoofer SPEAKER
6X DVD IDE DRIVE
MITSUBISHI 1.44M FDD
MITSUBISHI 17" Monitor
MITSUBISHI K/B, Mouse, Win 98,

Pioneer 2000 SERVER

Pentium III 500:	\$2980
Pentium III 550:	\$3230
Pentium III 600:	\$3480

OPTIONAL: 2ND CPU

Supermicro SBU 2940U2W BX M/B
128 M ECC PC100 RAM
IBM 9.1GB SCSI LVD HD
Diamond ASO 8M AGP VGA
40X SCSI CD ROM
Macase ATX Full Tower
INTEL 10/100M NETWORK CARD
MITSUBISHI 1.44M FDD
MITSUBISHI 15" Monitor
MITSUBISHI K/B, Mouse,
OPTIONAL: WIN NT SERVER V4

adaptec

Adaptec ultra 2 on board

Pioneer 2000 Valuebook

Celeron 433:	\$2190
Celeron 466:	\$2290
Celeron 500:	\$2390

32M SDRAM
4.8GB Ultra DMA HD
4M 128 Bit ATI Graphic
24 X CD Rom
12.1 SVGA DSTN LCD
3D Audio Stereo System
Microphone & Speaker
1 Type III / 2 Type II PCMCIA
MS Windows 98 CDMS Windows 98 CD

Pioneer 2000 Sohobook

Celeron 433:	\$2690
Celeron 466:	\$2790
Celeron 500:	\$2890

32M SDRAM
6.5GB Ultra DMA HD
4M 128 Bit ATI Graphic
24 X CD Rom
12.1 SVGA TFT LCD
3D Audio Stereo System
Microphone & Speaker
1 Type III / 2 Type II PCMCIA
MS Windows 98 CD
Upgrade to 14" TFT: +\$540

Pioneer 2000 Powerbook

Pentium II 366:	\$4090
Pentium II 400:	\$4360

64 M SDRAM
8.5GB Ultra DMA HD
8M 128 Bit Graphic
2x DVD Rom
14.1" TFT LCD 1024X768
3D Audio Stereo System
Microphone & Speaker
1 Type III / 2 Type II PCMCIA

The Pioneer - Mitsubishi Alliance

Evidence:



SOHO & POWER PC AND NOTEBOOK

Search Warrant Issued to: PIONEERcomputers.com.au

Online Order and Build to Order PC available!

PIONEER
COMPUTERS AUSTRALIA

Unit 17, 17-21 Bowden Street
ALEXANDRIA, NSW 2015
Ph: 02 9690 2888

Fax: 02 9690 0333
sales@pioneercomputers.com.au

Government Endorsed Supplier & ITS 2000 & ITS 2006 Contractor

READY TO DELIVER TO A DESTINATION NEAR YOU



MITAC BUILD-TO-GO

For those with immediate needs, MitAC offers the Build-To-Go (BTG) Pursuit and MiStation Series. The BTG Series offer power, manageability and quality - the features challenging corporate demands and the affordability value conscious business needs.

BTGs are pre-assembled, pre-configured, pre-tested, stocked locally and ready to ship. They're off the shelf, hassle-free and provide the perfect solution to your growing needs.

When you're ready to purchase that next PC, call us at 1300 651 665, we've got all your popular configurations.



MITAC Build-To-Order (BTO), the ultimate in flexibility, versatility and quality

Our BTO approach makes sure you get customised PCs how, when and where you need them. Pick the features you require until you have a MitAC PC with your name written all over it.



All MitAC PCs come with the latest Pentium Processors to ensure advance technology & performance to meet your needs.

Backed by MitAC three years limited warranty with optional extended and on-site warranty available.



National Service and Support Line
1300 658 891

DEALER REQUEST - FAX THIS COUPON NOW!

Yes I wish to become a registered dealer of Synnex products. **Fax to: 03 9540 0588**

Name: _____
Company: _____
Address: _____
Business Phone: _____ Business Fax: _____
No. of Employees: _____ No. of Sales Staff: _____
Business Type: OEM ☐ VAR ☐ Consultancy ☐ Distribution ☐ Dealer ☐
Postcode: _____

Proudly Distributed By
SYNNEX
*Bridging the Gap between
Vendors and Resellers*
1300 651 665
www.synnex.com.au
www.mitac.com.au

Multiprocessing and geometry processing.
By Nathan Taylor

Technobabble

This month's column was meant to be a follow-up on programming and scripting. However, in light of the feedback we received on the 'Maximum speed' feature (see *APC* October, page 88) and this month's review of the Nvidia GeForce 256 (see *First Take*, page 40), we realised that multiprocessing and geometry processing, two important issues for future computing performance, were more topical issues.

Multiprocessing

Although the technology has been around for a few years, it's rare to find a multiprocessing system made by a major manufacturer. Computer companies have had little interest in pushing multiprocessing to the masses, limiting its application to workstation and server systems. This is in spite of the fact that the most common chipset sold today for consumer systems, the BX chipset, is inherently capable of supporting two processors. The big problem is the lack of support for the technology in the world's most used operating systems, Windows 95 and 98.

Windows 9x can only see one processor, no matter how many are present in the system. While it will run fine on a system with multiple processors, it will only use one. Windows NT and 2000 are another story, both have the ability to support two processors in the Workstation/Professional versions of the products, and four or more in the server versions. Linux can use multiple processors, though its support is fairly recent and somewhat patchy. BeOS can also support two processors in a system (although it is not thread-based like most OSes). Most versions of Unix can support multiprocessing, but MacOS only supports one processor at this stage.

Most multiprocessing systems are thread-based. What does this mean? In multitasking operating systems (most post-

DOS operating systems), many applications are designed to run simultaneously, each getting a timed slice of the CPU's power. In simplest terms, the operating system sees each application that is running as a single thread (unless it happens to be a multi-threaded application) and it assigns each one a chunk of CPU time.

On a normal symmetric multiprocessing system (which all currently are), the operating system simply divides these threads between processors and assigns new threads to the processor with the least current load. However, a single thread cannot be split across processors, so if you are only running a single threaded CPU-hungry application, then its thread cannot be split across processors, effectively wasting most of the processing power of CPUs not receiving that thread. (As a side note, an asymmetric multiprocessing system would not split threads evenly across CPUs, instead weighting threads towards one processor or another).

Only a few applications can actually split themselves into multiple threads. Quake 3 Arena, for instance, has one thread for graphics and another thread for the rest of its operations. Assuming the operating system splits them across the processors, it can actually make use of up to two processors, dividing the load across them. However, Quake 3 is the exception rather than the rule—no other major commercial games make use of multiple threads. Most desktop applications also only use a single thread, and thus can only be applied to one processor. Generally, only higher-end applications like CAD and database applications are designed to use multiple threads and therefore take best advantage of systems with more than one processor.

That doesn't mean that multiple processors are useless for everyday users. For one, if you have a tendency to open numerous applications at once, the operating system can assign different applications to different processors. If you open Word and Excel,

for instance, each could be assigned to different processors. There is also some advantage when you open up single applications, as system-level services at least (those operating system-level things that are constantly running in the background) can be run on a different processor to the application, thus freeing up processing power on the CPU with the application running on it. So even if you only use your system for things like games, multiprocessing can be of some use. You won't see a huge performance increase, but there will be some, depending on the operating system and the game in question.

Finally, and not to be underestimated, is that SMP systems can be a little more robust than single processor systems. If an application crashes and suddenly decides to suck up 100% of the CPU, you still have other CPUs to work with. It's hard to kill an application when you don't have CPU power, because you can't access the system to send a kill signal. Using a multiprocessing system, you may still be able to.

The most likely system configuration you'll come across (unless you are a server administrator or work on a workstation) is a dual processor system. All you need to get one of these is a dual-processor motherboard, which is readily available from manufacturers like Tyan and SuperMicro, however, you'll probably pay a few hundred dollars more. You should also make sure that your computer case is large enough, and well ventilated enough, to support the motherboard and processors.

It's not necessary to put two processors in immediately, as you can always leave a slot free for future upgrades, or for when the price of the processor comes down.

Of course, you also have to buy a new processor that is the same speed as your current one. There are two reasons for this: the motherboards have a single, universal clock speed setting mechanism, and the OSes partition tasks evenly between processors.

Getting a multiprocessor system is not a bad option, especially with Windows 2000 in the pipeline. Processor prices are dropping all the time, so it can be a pretty good way to give your system a boost without forking out for a replacement PC.

Geometry processing

When Nvidia launched the GeForce 256, there was a bit of a kaffuffle about the value of transform and lighting (T&L) capabilities in graphics chips. T&L, formerly only present in workstation-level graphics cards, is now an option for consumers.

So what does a card with hardware transform and lighting do? Simply put, it takes the processor-intensive part of 3D graphics production out of the hands of the CPU and puts it on a custom circuit.

We've talked about the graphics pipeline before, but let's recap quickly here. Broadly speaking, there are two main phases: geometry transform and lighting (T&L), and rendering.

The main CPU typically handles the T&L stage. It is the drawing of the wire frame impression of what is to appear onscreen, taking the absolute coordinates of the objects in the 3D space and applying them to the viewer's perspective. It also involves calculating lighting levels for the objects. This stage is very intensive, and is likely to take up the lion's share of a system's processing power.

The second phase, normally the domain of the graphics card, is the rendering of the image — in effect "painting" the wire frame impression to make it look solid. The new T&L capable graphics cards can now perform both phases lifting those responsibilities from the CPU. Because it has circuits specifically built for geometry transformation, the new graphics card can generally do it much faster than a CPU.

A lot of people don't really understand the full benefits of geometry processing. For most people, the main appeal in the technology is not the raw speed it provides to games, but the ability to turn a system with a mediocre processor into a speed demon. It takes the host processor largely out of the equation when it comes to graphics processing, which allows even low-end systems to run some pretty

impressive graphics. That's not to say the host processor becomes irrelevant — game developers will surely find inventive ways to make use of it. With more CPU time to burn, developers can start work on improving physics modelling and artificial intelligence routines.

The bad news is that it will be several years before we see a great deal of advantages from transform and lighting acceleration. Very few games use APIs for their transformation engines. Most actually build their own geometry and lighting engines, using an API only for rendering purposes. This was fine when

ties of the API. OpenGL has a T&L component, and the recently released DirectX 7.0 also has T&L support — previous versions of DirectX do not, nor does Glide.

Just because a game supports OpenGL, doesn't mean it supports T&L automatically. The same can be said for DirectX 7; just because you're running it, doesn't mean it automatically uses the card's T&L engine. Both of these APIs have geometry engines, but the developers do not necessarily have to use them; frequently they will only use the rendering part of the API. Quake 3, for instance, uses OpenGL

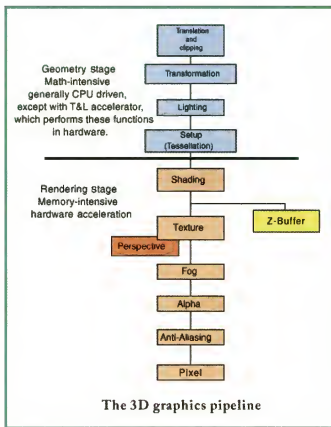
from end to end, so it will be able to use T&L immediately. Unreal, on the other hand, uses only the rendering parts of the APIs it runs on, so will not take advantage of the new accelerators.

Then there's the fact that most games are built with the lowest common denominator in mind. The number of objects appearing in a scene in most games are designed around the limitations of CPU-based geometry, and won't even make a hardware solution twitch. Most detailed games measure their onscreen polygon counts in the ten thousands. The new geometry accelerators list their polygon throughput in the millions.

There's no doubt that having lots of polygons in a scene makes the image look much better. The sharp edges you see on many objects and characters can be smoothed over, and curves look more like, well, curves.

Some vendors like 3dfx are concentrating their efforts on producing parts with very high rendering speeds instead of integrating T&L. This is a simple ploy; these cards will run existing games far better than cards with T&L engines that are unused by the games. Future games with higher polygon counts will run slower on these cards as they are limited by the host CPU when it comes to geometry, but it's almost certain that cards with high fill rates will win the benchmark and frame rate battles today.

Nathan Taylor can be contacted at ntaylor@apcmag.com.au. For a complete archive of APC Technobabble columns, see <http://www.apcmag.com/babble/>.



there were no video accelerators capable of taking advantage of T&L, and it even allowed game developers to easily port the application to different APIs as all they had to do was make a few changes to the way the data was sent to the rendering API. So a single application could support Glide, DirectX and OpenGL, depending on the user's preference and the card in use.

To make use of a card's T&L capabilities, the game or application must be written to take advantage of the T&L engines present within the APIs, rather than just using the rendering capabili-

SONY®



21"

Platinum Series

- New Flatter CRT Design
- Super Fine 0.25-0.27mm Variable Aperture Grille Pitch
- Vertically flat short-neck CRT design
- Digital Multiscan Technology supports multiple PC and Mac resolutions up to 1600 x 1200 @ 85 Hz
- Automatic Size and Centering™ (ASC) circuitry for automatic screen sizing and centering
- Dual inputs 15 pin D-sub and 5 BNC
- High-performance AR film coating
- Advanced on-screen digital controls
- Zero-watt power-off switch



19"

Platinum Series

- New Flatter CRT Design
- Super Fine 0.25-0.27mm Variable Aperture Grille Pitch
- Vertically flat short-neck CRT design
- Digital Multiscan Technology supports multiple PC and Mac resolutions up to 1600 x 1200 @ 85 Hz
- Automatic Size and Centering™ (ASC) circuitry for automatic screen sizing and centering
- Dual inputs 15 pin D-sub and 5 BNC
- High-performance AR film coating
- Advanced on-screen digital controls
- Zero-watt power-off switch

15"/17"

Elite Series

- Super Fine 0.25-0.27mm Variable Aperture Grille Pitch
- Vertically flat short-neck CRT design
- Digital Multiscan Technology supports multiple PC and Mac resolutions up to 1700 x 1200 @ 85 Hz
- Automatic Size and Centering™ (ASC) circuitry for automatic screen sizing and centering
- Dual inputs 15 pin D-sub and 5 BNC
- High-performance AR film coating
- Advanced on-screen digital controls
- Zero-watt power-off switch

17"

Gold Series

- Super Fine 0.25-0.27mm Variable Aperture Grille Pitch
- Vertically flat short-neck CRT design
- Digital Multiscan Technology supports multiple PC and Mac resolutions up to 1700 x 1200 @ 85 Hz
- Digital Display Compensation™ control for color and image compensation in the 4:3 format
- Variable Picture Positioning™ (VPP) controls
- Compatible Audio Video and RGB
- ScreenSynchronizer™
- Microbial overcoat to resist lint and dust
- Advanced on-screen digital controls
- Zero-watt power-off switch
- Dual inputs 15 pin D-sub and 5 BNC
- High-performance AR film coating
- Advanced on-screen digital controls
- Zero-watt power-off switch

Distributor

Global Business

Unit 2/78 Ferndell Street Granville

Global Victoria
36 Catalina Drive
Tullamarine Victoria
(03) 9335-6088
(03) 9335-6094

No Power Adapter



The Evidence of Green Concept

True USB Scanner



I236USB

- Fantastic semi-clear shape
- 600 x 1200 dpi high resolution
- High speed scanning
- Professional color correction technology
- Work for PC or iMac
- No power adapter required (USB-bus-power)
- Slim dimension, saving space
- Hot plug & play anytime

Technology Int'l Pty Ltd.

South NSW 2142 Tel:02-9644 3900(Sydney) Fax:02-9644 3932

Website: www.gbt.com.au
Email: sales@gbt.com.au

Sharing your Internet connection.

By Daniel Rutter

Step by Step

It is increasingly common for households and small businesses to have more than one PC. The most obvious way to connect multiple computers to the Internet would be to attach a modem to each PC. This isn't the best solution, however, because you would either need to install multiple phone lines (and, probably, get multiple Internet accounts) or take turns to dial up; both of which are expensive.

If the computers are networked they can quite easily share one Internet connection — if they aren't, the cost of networking them is considerably less than the cost of a modem for each PC. A single modem connection is sufficient for light Web use and email. If there are a lot of heavy Internet users or Internet game players, then a faster connection is necessary. Either way the connection can be shared.

There are two basic ways to share a Net connection: using a proxy server or Network Address Translation (NAT). Serious network-oriented operating systems like Linux can do bulletproof Internet sharing, but it's possible to achieve it on Windows as well, and you don't need to be a propeller head to get results.

Internet sharing requires the use of TCP/IP protocol (Transmission Control Protocol/Internet Protocol — the protocol that the Internet is based on) across the network linking the PCs that will use the connection. On most small Windows networks, only those machines that have a modem and use dialup networking will require TCP/IP — in that case TCP/IP is the protocol operating over the dialup adaptor, and the network itself uses IPX/SPX or NetBEUI. It's easy to add TCP/IP. The installation guides that come with the more popular sharing systems and the basic Windows help system cover TCP/IP address setup adequately. TCP/IP won't interfere with the other protocols your network may be running.

Proxies

Most Internet users will be familiar with proxies already because many ISPs (Internet Service Providers) run one and either request or demand that all customers use it. Your ISP's proxy server sits between your client applications (for example your Web browser) and the servers on the Inter-

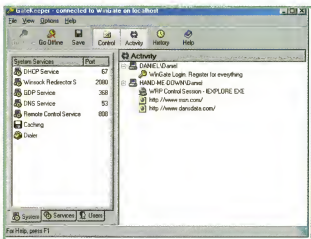
net from which you're requesting information. When you make a request it goes to the proxy server — the proxy server will only pass the request on if it has to. If it already has the data you want in its local cache, it can deliver it more quickly.

This improves performance in much the same way as your browser's cache, which is stored on your hard drive. You can retrieve data from your hard drive faster than you can download it via modem. Similarly, retrieving data from your local ISP is faster than getting it from a more distant server. An ISP's proxy caches everything that's been requested by all of your ISP's customers, so you can get data quicker the first time you request it, provided someone else has asked for it before.

Proxies can also do fancier tricks, like blocking banner ads or preventing access to particular sites. All of the basic Internet applications — HTTP, FTP, email, telnet and so on — will work fine through a correctly configured proxy, but it also lets you control which Internet services your clients can access.

ISP proxies have to be high performance systems, but you can run a bonsai version on any regular PC. If you want to use a proxy server to share your Internet connection you'll need to install the proxy software on the machine that is physically connecting the network to the Internet. As long as the proxy machine is on the same TCP/IP network as the rest of the computers, sharing the connection is easy. All you need to do is specify the proxy machine's address in the appropriate section of the Internet configuration of each machine that you want to use the connection — whenever the proxy machine is online, so are the others.

A proxy also acts as a 'firewall', giving you some network security. There's no way for requests from the outside to get to any local machines other than the proxy box, and you can specify which, if any, requests the proxy box will listen to.



WinGate lets you easily control and monitor the services used by clients

Possibly the most popular proxy server for the Windows platform is WinProxy. It is commercial software and there is a free evaluation version available that you can try for 30 days. It's got a friendly setup wizard, provides information about what you have to change on your client machines to make them work with the proxy, and lets you administer each client's access rights and services individually. For instance, you may want some clients to have HTTP access only, or just mail and FTP, or whatever combination you like.

This makes WinProxy a good choice for small business owners who want to prevent employees from accessing the Web, but still allow them to use email. WinProxy can also log each client's activity and restrict the time they can spend online — a handy feature for any parent.

NAT

Network Address Translation (NAT) is easier to use than proxy software; it provides automatic translation of incoming and outgoing data, and you don't have to fiddle with the clients as much to make them work with it. Like a proxy, a NAT setup runs on the computer (or other appliance) that physically connects the network to the Internet, but unlike a proxy, it does practically no processing of the data and does not store it locally.

This makes NATs more transparent than proxy servers, but they don't have

LITEON



Performance
Reliability
Innovation
Ergonomics



Available in
15", 17" & 19" CRT



Available in
15" & 18" LCD

Liteon For When Performance Counts

Cosmic performance with flicker free, lifelike colours & sharp screen displays

Proudly Distributed in Australia by: Z-Tek Computer P/L

■ VIC (613) 9552 2888 ■ NSW (612) 9557 7299 ■ QLD (617) 3216 0222 ■ SA (618) 8277 9711 ■ WA (618) 9244 8288

Interested dealers & resellers can apply online www.z-tek.com.au

the ability to cache pages or filter network traffic, which is necessary for ad filtering, or instance.

Possibly the most accessible NAT software available for Windows today is the Internet Connection Sharing (ICS) feature built into Windows 98 SE (Second Edition). Only the computer that is physically connected to the Internet needs to have Windows 98 SE installed; the other machines need only have TCP/IP installed.

If you're using a simple LAN, ICS is an excellent way to share an Internet connection.

ICS includes a Dynamic Host Configuration Protocol (DHCP) server that automatically assigns IP addresses to all computers on the network. Provided you install TCP/IP, Windows ICS will work brilliantly.

If any of the machines on the network are previously set up to use a proxy server, you'll have to manually clear the proxy settings on each machine in order to use ICS. You'll probably run into difficulties with ICS if your network configuration changes. For instance, if you take the ICS server machine and temporarily plug it to a network that has its own DHCP server, the ICS DHCP server will detect that

there is another DHCP server in operation and turn itself off. Making ICS work again afterwards means reinstalling Windows is... well, it's a challenge we have yet to overcome. Microsoft's offline and online documentation for ICS is copious, but not necessarily helpful.

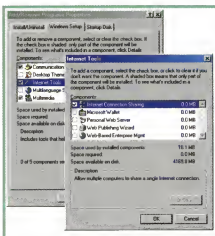
There are other cheap Windows NAT packages, such as the \$US25 shareware program NAT32. There is an evaluation version of NAT32; it's fully functional, but it will only allow you to use it for an hour at a time. There are two other popular Windows NATs: WinGate and SyGate. Both are more capable and less mystifying than the Microsoft option, and have downloadable evaluation versions. It's actually worth downloading SyGate for its documentation alone, as it explains the whole process a lot better than Microsoft's ICS documentation.

Gameplay

It's possible to play online games via a proxy or a NAT, and many games will work perfectly with the more popular sharing packages. If you do need to change things, you'll have to open specialist TCP or UDP (User Datagram Protocol, the simple protocol used by games like Quake) 'ports' that games frequently use for communication. The kind of port and its ID number depends on the game being played.

You should probably shelve any fantasies you may have about using a single-modem, shared connection to hold a Quake party, or for any other multiplayer gaming scenario — it is not worth trying. A single player will easily consume all of the bandwidth that even the fastest modem can provide, and still not achieve smooth game play. A single modem simply can't provide decent game play for more than one person. If you're using a proxy, it's likely you'll see a further reduction in performance, because the proxy takes a significant amount of time to process the game data. NAT software is faster than a proxy, and generally doesn't add enough lag to worry about.

Less time-critical entertainment, such as real time strategy games, deals with restricted bandwidth better. Even then, if lots of units start fighting you're likely to find yourself with the same nasty lag and drop out issues. Turn based strategy



Internet Connection Sharing is a stock component of Windows 98 Second Edition

games, on the other hand, can work really well even over very slow connections.

Hardware or software?

You can get hardware devices that perform proxy or NAT functions. These devices can be an excellent solution for a small business. Plain modems that support one or two modems cost much less than a new PC. They're even more reliable than a Linux box (*and much more reliable than a Windows box*), and are about as easy to set up as software-based solutions. A hardware device can be left to run continuously 24 hours a day, seven days a week in a cupboard somewhere with its modem. If you use a PC in a dual role as connection distributor and workhorse, it's very unlikely you'll be able to match the reliability of a dedicated hardware device.

Proxies v. NAT

Proxies allow you to have greater control over access privileges and allocation, but NATs are generally easier to set up and will better meet the needs of applications like network games. For a plug-and-go office solution, a stand-alone hardware proxy device is a good choice. For home networking, ICS works brilliantly. For a really industrial strength solution, a Linux box is the way to go. But you don't need much expertise to set up the simpler Internet sharing options, and the benefits are huge.

Daniel Rutter can be contacted at dan@dansdata.com. For a complete archive of APC Step by Step columns, see <http://lanmag.com/step>.

Further reading and links online

WinProxy

<http://www.winproxy.com/>

NAT32

<http://www.nat32.com/>

SyGate

<http://www.sygate.com/>

WinGate

<http://www.wingate.com/>

The NAT Page

<http://www.uq.net.au/~zzdmacka/the-nat-page/>

Modem sharing information

<http://www.timhiggins.com/>

Cable modem sharing info

<http://www.cablemodeminfo.com/cablsharing.html>

Acershare.jpg

This Acer Internet access sharer has two modem connections and retails for about \$425.

The latest advances in Microsoft's multimedia technology.

By Kieran McNamee

Windows 98

Windows 95 made a large contribution to advancing the multimedia capabilities of personal computing. Windows 98 continues this effort by enhancing already seen features and introducing new ones, including the latest Windows Media Player and its companion Windows Media Technologies 4.0.

The Windows 98 CD player hasn't changed. The latest DirectX APIs (Application Programming Interfaces) are supported and are easily upgraded using Windows Update. These APIs are very important for various forms of multimedia, especially gaming. The different components of DirectX, such as DirectDraw and DirectSound, interact with the running application and the operating system so you can get the most out of your system. Each version of DirectX improves on the last, so it is important to have the most recent files on your system. Installation of multimedia devices is of course easier in Windows 98 because it supports a greater variety of Plug and Play peripherals.

One of Windows 98's new multimedia features is WebTV, which allows you to view standard and interactive television broadcasts with a TV tuner card. Another brilliant addition is the ability to use multiple monitors.

Microsoft's new Windows Media Technologies has shaken the dominant Internet multimedia delivery formats and created conflict between Microsoft and RealNetworks.

The main component of Windows Media Technologies is the latest Windows Media

Player, and it is one of the biggest multimedia improvements in Windows 98. The original version that comes with Windows 98 is a step above anything Windows 95 had to offer, but the latest version of the Media Player will impress you even more.

At the time of writing, the most recent version of Windows Media Player was 6.4. Windows Media supports WAV and AVI formats along with a whole pile of others, such as MIDI, MPEG, MP3, MOV and AU.

Microsoft's new MSAAudio format is challenging MP3 as the best digital audio format. The MSAAudio format delivers near MP3 quality in a file about half the size. This means you are able to download songs twice as fast, and store twice as much music on your portable digital player.

Streaming media is another big improvement. The term streaming is used for audio and video files that play as they are being transmitted to the player. The main advantage of streaming media is that you don't have to wait to see or hear what you want.

Streaming media has been available on the Internet for some time, albeit in a low-quality form. The technology is yet to reach the stage where broadcast of full-screen TV shows and videos is possible, but it's getting close.

Streaming media has been the domain of RealNetworks' RealPlayer, but Microsoft's new Advanced Streaming Format (ASF) represents stiff competition for RealNetworks and its RealSystems G2 format. Many reports and tests seem to indicate that Microsoft's new format is substantially better.

The current problems with streaming media revolve around the Internet's delivery speed, packet loss during transmission, and the uncertainty of the recipients' acceptance speeds (for example,



cable modem users will receive better presentations than those using a 28.8Kbps modem).

Ensuring that playback is not interrupted by delays in the network is a difficult task, but one that Media Player achieves quite well. The technique used is called buffering and it involves collecting a small backlog of data before the file starts playing. If the data keeps flowing fast enough, playback remains continuous. This means you only have to wait the few seconds it takes to create this buffer before viewing the file, regardless of whether the file lasts 30 seconds or 30 minutes.

You can find some streaming audio and video content on the Internet in Microsoft's ASF, but the majority remains in RealAudio and RealVideo formats. You will still need RealPlayer G2 to play the latest RealSystem G2 files, so Microsoft hasn't managed to get a stranglehold on the market yet.

You can connect to Web radio stations with ease if Internet Explorer 5.0 is installed, and the output is impressive.

Media Player's streaming video capability also passes the test. The presentation



is very impressive; the audio and images flow smoothly and Media Player doesn't pause to rebuffer too frequently. A similar audio and image presentation viewed on RealPlayer did not produce the same quality as Windows Media Player.

The new Windows Media Player is able to produce high-quality streaming output because of the new codecs included in Windows Media Technologies 4.0. The word codec is derived from the words 'compressor' and 'decompressor'. If codecs were not used to reduce the size of multimedia files then it would be impossible to send them over the Internet. Codecs implement a compression algorithm to reduce the size of the media file. When a file is compressed, it loses some of its original data in order to reduce transit time. Content providers struggle to find a suitable trade-off between delivering high-quality content and achieving acceptable data compression rates. MP3, RealVideo and JPEG are examples of common codecs.

Windows Media Technologies 4.0 has three codecs that were designed for encoding music, video and voice content. These have the best quality, broadest frequency range and fastest encoding speed of any codecs available on the market today (in Microsoft's opinion anyway).

The first of the new codecs is Windows Media Audio. It can deliver near FM radio quality sound at 28.8Kbps and near CD quality at 64Kbps. Its frequency range is two to four times greater than that offered by other codecs, preserving more of the original signal to deliver better audio to listeners.

The second is a video codec, MPEG-4 v3, based on the MPEG-4 video-coding standard (Motion Picture Experts Group V4). It was designed to deal with high compression ratios for distribution of video over low bandwidth networks while still providing excellent quality at higher bit rates.

The third codec is called ACELP (Algebraic-Code-Excited Linear Prediction Vocoders). It was designed by Sipro Lab

Telecom for compressing the human voice to produce high-quality wide-band audio at very low bit rates. When these codecs come together, the result is a streamed content that can be delivered efficiently and with fairly good quality.

RealNetworks v. Microsoft

Considering all of Microsoft's competing technologies you would think that there would be some kind of unrest from the opposing camp at RealNetworks. There is.

The conflict started after Microsoft hired the National Software Testing Laboratories (NSTL) to evaluate Windows Media Technologies (MSAudio and ASF) and compare them to MP3 and RealSystem G2 formats. The tests returned a positive appraisal of the Windows Media Technologies formats.

After these test results were announced, RealNetworks responded by publishing new tests that said that RealSystem G2 and MP3 offered superior audio quality to the Windows Media formats. Microsoft responded with a press release claiming that RealNetworks' testing procedures were flawed and would produce inaccuracies.

If you want to have a look at all the bickering for yourself, go to the companies' Web sites. The results of the tests that the NSTL conducted for Microsoft can be found at <http://www.nstl.com/downloads/Final%20MSAudio%20Report.pdf>.

Hostility between these two industry leaders dates back as far as July last year. RealNetworks claimed that Microsoft had intentionally designed a version of Windows Media Player that would cause RealPlayer to malfunction if the two were simultaneously residing on a system. Despite the CEO of RealNetworks, Rob Glaser, testifying before the US Senate Judiciary Committee, it was found that RealPlayer G2 was the program with the fault. Microsoft sent a letter urging RealNetworks to focus on its customers rather than wasting everyone's time in court.

Since the release of Windows Media Technologies 4.0 in April, Microsoft has received a lot of support from leading music sites, independent record labels and various industry players. The latest versions of Nullsoft's WinAmp and Media-Science's Sonique have added support for Windows Media audio formats, so you can now play MSAudio files on the same player you use for MP3s.

Windows Media Technologies also includes Media Rights Manager to address the concerns of the music industry. If the intellectual property rights of artists and companies are secured they will make more music available for Internet consumption. Currently the digital music scene on the Web is a hotbed of piracy. It is doubtful that Microsoft could remove the piracy element altogether, but they can open up legitimate avenues for honest consumers to reimburse artists for the music they download.

Microsoft has made the Windows Media Tools and Windows Media Audio SDK (Software Development Kit) available to assist developers. As MSAudio and Windows Media Rights Manager become functional on more Web sites, the opportunities for successful Internet music distribution and sales will improve and piracy concerns will decline.

If you want to learn more about Windows Media Technologies, see Microsoft's Windows Media Web site at <http://www.microsoft.com/windows/windows-media/>. You will find a copy of Windows Media Player 6.4 on apcmag.cd. If you want to learn how to create your own media using the technology discussed in this article, see Microsoft's Web Workshop at <http://msdn.microsoft.com/workshop/imedia/windowsmedia/>.

Kieran McNamee can be contacted at kmcnamee@apcmag.au. For a complete archive of APC Windows 98 columns, see <http://apcmag.com/win98/>.

Windows 98 shareware

Master Converter 2.11

A complete unit conversion utility, covers everyday and specialised requirements.

The Electric Mind 1.1

Unusual brainstorming program that uses unexpected word associations to spark creative thinking. It can be set up to handle a wide range of topics.

Pretty Good Solitaire 99 5.1.1

The ultimate program for the solitaire aficionado. It has 300 games, attractive graphics and tools to create new games.

AceReader 4.1

Educational tool that can improve reading proficiency significantly. It also makes it easier to read documents.

WinRescue 98 8.0.9

Well-designed utility package for backing up and restoring essential files; a potential lifesaver when Windows crashes.

All these packages can be found on this month's apcmag.cd, along with more detailed reviews.

Lookin' good — tailoring the Workplace Shell according to your tastes. By Christopher Relf

OS/2 Warp

Although OS/2 is widely accepted as a more efficient and stable operating system, when it comes to appearances, Microsoft has done an admirable job. Let's face it — Windows 9x looks good. Its got clean graphics, animated icons and nicely packaged themes. Sure, these touches don't make an operating system, but they do help users survive arduous hours in front of the PC.

Don't think that OS/2 doesn't have any 'look good' features, just because you can't see them in a default configuration. Warp actually has 3D effects, high-colour icons and sound schemes. Warp 4.0 is the product of continual version advancements over many years — it's not like Windows 95, which was largely rewritten from the 3.11 days. But, unlike its Windows counterpart, OS/2 enhancements are poorly coordinated, forcing Warp's old GUI and desktop schemes to work with the new enhancements and additions. Unfortunately, it's not easy to pull all of them together, but it can be done.

Usually, you need to work with five main areas: the background, icons, window colours, fonts and — a big favourite — the folder backgrounds.

Background and icons

Most people change the background first, and many make a big mistake — it can be the most resource-hungry change you can make. OS/2 users often find themselves complaining bitterly after installing a 7M bitmap on the desktop only to find it almost brings their system to its knees. Generally, the resource cost is equal to the

size of the image, so it's best to use GIFs or solid JPEG images, as they are likely to be small. In Warp 4, you can use any Warp supported image file (including JPEGs, GIFs and even TIFFs) as a background. Testing to see if it fits is as easy as dragging the file to the preview window on the Background tab under desktop Properties.

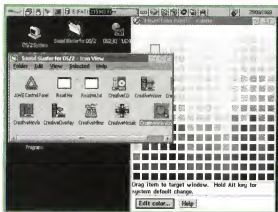
If you're interested in creating a scheme, you'll want your icons, background and sound files to form a consistent theme, so look for a source of icons and backgrounds on the Internet. This topic will be revisited next month with a few suggestions.

Colours and schemes

The method used to alter the appearance of folder windows is one of the most impressive areas of the OS/2 Workplace Shell (WPS). It's an excellent example of OS/2's drag-and-drop integration.

Open up the mixed colour palette in the System folder and then start mixing. If you are not impressed with the default colour palette, click on a white square, choose Edit Colour and get creative. After you've selected a colour to serve as a base theme, make four shades ranging from light to dark.

Finally, find a folder to play with, and start dragging colours to it from the system palette. Most areas on a folder window can be coloured, however, IBM forgot to included the close, minimise and maximise buttons; you can't change their standard grey.



Once you've chosen a scheme, try to remember what you dragged where, then re-drag each colour to each area while holding down the Alt key. This will activate your changes system-wide, and they'll remain when you reboot. (It's probably not a bad idea to make a desktop archive here, just in case you don't like your changes.)

You can also use a scheme palette to edit your folder colours, although you may find it a bit more difficult. It's fiddly, and some things can't be changed (for example, window edges). Most people will find it easier to experiment with the desktop manually.

Next month you'll learn about enhancements such as animated icons and cursors, and scheme management, which will help you keep your machine looking good.

Christopher Relf can be contacted at Christopher.Relf@start.com.au. For a complete archive of APC OS/2 columns, see <http://apcmag.com/os2/>.

OS/2 shareware

Binary News Reader 1.37

The Binary News Reader allows easy downloading and decoding of single and multipart newsgroup binary files that are MIME (Base64) or uuencoded.

NewsBeat 1.00

A small, fast and easy newsreader, but it has problems with large newsgroups.

PMINews

PMINews has a very useful and intuitive interface and allows you to navigate quickly.

ProNews/2

ProNews/2 has an excellent process manager, which gives you complete control over queued tasks, and offers message threading and customisable toolbars.

Dialog Enhancer '99

Dialog Enhancer '99 gives your OS/2 Warp system a timely overhaul, providing a consistent look for your dialogs.

All these packages can be found on this month's [apcmag.cd](http://apcmag.com), along with more detailed reviews.

Take advantage of some newer disk formats.

By Stephen Withers

Mac OS

A DVD drive is now standard on some Power Macintosh and PowerBook models. Although there is almost no Mac software on DVD-ROM, there is a growing range of DVD-Video titles available.

Although you can watch DVDs on your computer, it's easy to hook up a DVD-equipped 'bronze' PowerBook G3 to your TV for group viewing with the PowerBook's S-Video output and an S-Video to video adaptor.

When the PowerBook is turned off or asleep, plug the short adaptor cable into the socket labelled 'out' below the icon of a video camera superimposed with the letter 'S'. Use an RCA to RCA video cable to connect the adaptor to the video input of your TV. Naturally, if the TV has an S-Video input, omit the adaptor and make the connection with an S-Video cable.

If you have a pair of amplified speakers, plug them into the PowerBook's sound output connector (next to the power socket). It's possible to connect to a stereo amplifier and speakers or the TV audio input, but that's another story.

When you restart or wake the PowerBook, the TV becomes the display. Because the computer defaults to NTSC, you may need to adjust the TV's vertical hold to get a stable picture before proceeding. Once the computer's display is clear, open the Monitors & Sound control panel and select 640 by 480 PAL. You'll probably need to readjust the vertical hold after doing this. If this setting is clear, try successively higher resolutions until you've determined the best available picture, then close the control panel.

Put a DVD in the drive and launch Apple DVD Player from the Apple menu. Click the play button on the circular controller and you're off. When the DVD movie presents an onscreen menu, you can use the mouse or trackpad to control the player interface.

Keyboard commands are a lot more convenient than the controller. The important ones are Space (play/pause), Escape (disc menu), Option-Command-P (toggle between video-in-a-window and presentation modes), and the Command-left and Command-right arrows (rewind and fast forward).

Option-Command-C (hide/show controller), Command-0, 1, 2 and 3 (smallest, half, normal and full-screen video) and the Command-up and Command-down arrows (volume up and down) are handy when determining which settings give the best results on your system. Although it seems a waste of pixels, the normal size gives the best results on the PowerBook's LCD display, but full screen seems more natural on a TV.

If you forget the commands when the display is in presentation mode and the controller is hidden, simply move the mouse to the top of the screen and the menu bar will reappear.

Picture CD

Picture CD is the first application for CD-PROM, a technology developed by Kodak that allows the first session on a multi-session disc to be pressed in a similar way to CD-ROM while allowing subsequent sessions to be added by a CD-R drive.

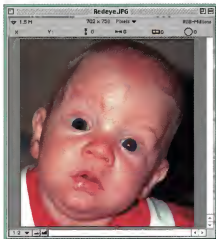
Although Kodak is yet to provide Macintosh support on Picture CD discs, they can be used on a Mac providing File Exchange is active. If it isn't, reactivate it with Extensions Manager, or a third-party startup manager such as Conflict Catcher, and then restart the Mac.

The pictures are stored in the folder labelled, logically enough, PICTURES. Because the Picture CD specification uses the JPEG format, no special software is required to view them as long as QuickTime is installed. In fact, if QuickTime Exchange is enabled, PictureViewer will launch automatically when you double-click on an individual picture document.

If QuickTime Exchange has been turned off, you can enable it by opening the QuickTime Settings control panel, selecting QuickTime Exchange from the pop-up menu, and checking the Enable QuickTime Exchange box. You then need to restart.

Image manipulation

In addition to displaying the images, PictureViewer can also rotate, flip, print or export images in several popular formats. You can also copy the entire image, but there's no provision for selecting and crop-



One eye has been corrected with Digital Darkroom's red-eye filter. Note the reflected highlight is still visible.

ping a portion of it. The obvious way to achieve this is to export the image as a PICT file, open it with SimpleText and make the selection there, but this doesn't work — all you'll see is an empty window. Converting a Picture CD image from JPEG to PICT with MacLinkPlus will work, but if you open the result with SimpleText you'll have trouble copying a selection bigger than about 300K (about 375 by 275 pixels) unless you allocate more memory to SimpleText. You'll need about 12,500K to copy a whole picture.

Opening the JPEG image with a dedicated graphics program is a much better idea. Photoshop is ideal, but an equally suitable application may have been bundled with your scanner or digital camera. You can also use a relatively cheap program such as Color It from MicroFrontier.

Color It 4.0 includes scratch, dust and red-eye filters, which makes it especially suitable for editing family snaps. At the time of writing it cost only \$US50 plus shipping (<http://www.microfrontier.com/>). If you want something more basic, MicroFrontier's Digital Darkroom (\$US40) hits the spot. Using Digital Darkroom to remove red-eye isn't as easy as it could be, as you have to select the red area first. Repeated shift-clicking with the magic wand tool seems to be the simplest way of doing this. Demo versions of both programs are available, so you can try them first.



INTERACTIVE MUSIC



Turtle Beach™

high performance audio hardware

Music, Games, MIDI and Multimedia

The total 3D gaming experience!



\$349.95 srp

Montego II Quadzilla

- A3d 2.0 positional audio with 4 speaker support
- High resolution 18-bit stereo recording and playback at up to 48kHz sample rate
- High quality audio performance with >97db signal to noise ratio
- 320 voice pci wavetable synthesis
- DirectSound acceleration with multi-streaming bus-mastered PCI audio
- Win 95/98/NT 4.0



\$179.95 srp

The Montego II™ - 320-voice PCI Audio Accelerator

Turtle Beach brings you the ultimate in PCI audio technology with the Montego II™. With advanced features such as high-speed bus-mastering scatter-gather PCI audio interface, DirectSound acceleration, 320 voice wavetable synthesis, A3D positional audio for realistic gaming effects, hardware-based, full-duplex record/playback at full bandwidth and 96 DMA channels, Montego II maximizes your multimedia experience by delivering state-of-the-art audio performance! Montego II also runs legacy DOS games,* so you can supercharge Windows audio without giving up DOS games compatibility.

Montego II is the affordable way to upgrade PC performance in Windows. Which is just what you'd expect from the leaders in award-winning PC sound technology—Turtle Beach!

Transform your PC into a digital recording studio with the Montego II Home Studio™ from Turtle Beach™

The Montego II Home Studio seamlessly integrates Voyetra's award-winning MIDI / Digital audio sequencer, Digital Orchestrator Pro™ with a powerful Montego II™ sound card. Built in enhancements such as 18 Bit digital audio recording, a S/PDIF digital audio I/O interface, a 64 voice DLS compatible sampler, an external MIDI interface, built in effects and more provide all the composing power you need for professional grade recordings

Montego II Home Studio



\$899.95 srp

VY10009

Features

- >97db signal to noise ratio
- 18 bit audio converters
- RCA and optical digital I/O
- MIDI synthesizer featuring Roland GM/GS support
- Up to 96 hardware accelerated Direct Sound streams
- Full version of Voyetra's Digital Orchestrator Pro sequencing software
- MIDI and digital audio editing tools included
- 10 band graphic EQ with digital display
- 128 hardware wavetable voices
- 256 software synth voices
- Win 95/98/NT 4.0

Available from: Harvey Norman Computer Stores (National) Dick Smith Power House (NSW & Vic) – MegaMart (Vic & Qld)
VIC: Myer Electric 9661-1111 Troy House of Music Ringwood 9870-4143 JB Hi-Fi 9471-3511 NSW: Daymayne 8778-2222
WA: Abacus 92421344 SA: Berlin Wall Software Supermarket 8231 4799

Errors and omissions excepted. Pricing subject to change without notice.

Proudly Distributed by ADM Distribution Pty Ltd. Ph 1800 060 825 Dealer Enquires Welcome. www.admdistribution.com

Slideshows

You can create a slideshow of your favourite photos using QuickTime Player providing you have upgraded to QuickTime Pro. If you want to include photos from more than one Picture CD, it is easier if you start by collecting copies of all the photos you are going to use in a single folder.

Launch QuickTime Player, then select Import from the File menu, navigate to the first photo and click the Convert button. Select Fill Screen from the Movie menu so you can see the entire image.

Open a new player (select New Player from the File menu) then go through the following process for each of the remaining images. Import the picture and select Fill Screen just as you did to the first image. Copy it, then switch to the first window. Ensure that the black diamond is at the right-hand end of the progress bar and paste. As a final step, return to the second window. This is a good time to save the file, but remember to Save As or you will overwrite the file containing the first picture you opened. Remember to choose the self-contained option if you want to be able to run the slideshow without the image files you imported being present.

If any of the images you want to include are in portrait format, they will appear rotated 90°. To turn such a picture the right way up before copying it into your slideshow, open it in QuickTime Player then select Get Info from the Movie menu. Select Video Track in the left-hand pop-up menu and Size in the right-hand one. After the two curved-arrow buttons appear, click whichever one is appropriate to rotate the image, and then close the dialog box. You'll probably need to resize the movie (use Fill Screen from the Movie menu), because the Fill Screen size for landscape photos is too big for portrait

shots and the player window will extend off the screen. This means the landscape images will be smaller than necessary, but you can't have everything when working on a shoestring budget.

Be sure to rewind the movie by sliding the black diamond progress indicator in the controller before moving to the next step, or you won't see all the photos when you run the slideshow.

Select Get Info from the Movie menu, then select Controller in the right-hand pop-up menu, click on None Movie Controller and close the dialog box. This step removes the controller to make more room for the pictures. Now select Fill Screen from the Movie menu so the pictures will be shown as large as possible.

To run the slideshow, select Present Movie from the File menu. Make sure Current is selected as the movie size and click the Slide Show button. Now click the Play button to run the show. Use your mouse button to advance from one slide to the next till you've seen the last slide, then type Command-full stop, or press the Escape key.

After the slideshow, you'll need to restore the movie controller so you can rewind the sequence; in the Get Info dialog, select Movie Controller instead of None Movie Controller. The trick is to leave the Get Info dialog open the entire time you are working with the slideshow, which saves you repeat visits to the Movie menu.

A neater way of doing all this is to use Apple's free MakeEffectsSlideShow (see <http://www.apple.com/quicktime/developers/tools.html>). Launch the program and select Make Effects Slide Show from the Test window. In the resulting dialog, select the images (or movies) in order. When you've chosen them all, click Cancel. Next, pick a transition effect from the list, watch the preview and explore the



The look and feel of the Apple DVD Player's controller is reminiscent of QuickTime Player.

parameters. When you're happy, click OK and you'll get the familiar Save As dialog.

Desktop pictures

Picture CD images can easily be used as desktop pictures. For convenience, copy the desired images from the CD into the Appearance folder within the System Folder and give them appropriately descriptive names. Open the Appearance control panel, click the Desktop tab, remove any existing picture, then click Place Picture and choose an image. The aspect ratio of a normal photo is 3:2 whereas most Mac displays are 4:3. This means the picture will either be distorted, cropped or letterboxed. Appearance's Position Automatically option usually does a good job of fixing this, but it is worth seeing if Center on Screen or Fill Screen looks best for any particular image.

Stephen Withers can be contacted at swithers@ozemail.com.au. For a complete archive of APC Mac OS columns see <http://apcmag.com/mac/>.

Mac shareware

Iconographer 1.0.2

A simple but effective design and editing environment for the 32-bit icons introduced with Mac OS 8.5.

Drop Drawers 1.0.1

Drop Drawers builds on the features offered by palette-type launcher utilities with additional presentation modes.

Screen Catcher 1.5

Screen Catcher can post-process full or partial screenshots to selected colour

palettes and direct them to a window, the clipboard, a printer or to a file as optimised JPEG, PICT or GIF images.

Sleeper 3.2b5

Sleeper implements the functions of Apple's Energy Saver control panel, plus some unique ones.

Clean-Install Assistant 1.1

CIA aids and speeds reconfiguration after a clean OS installation by isolating personal and third-party items from the

previous System Folder, and restoring them to the new one.

File Smiler 1.61

The creation of Self-Mounting Image (.SMI) files is given drag-and-drop simplicity with File Smiler. All you need is Apple's Disk Copy utility installed.

All these packages can be found on this month's **apcmag.cd**, along with more detailed reviews.

Linux

Cloning a complete Linux setup can save you time when setting up a series of machines in an environment that needs identical (or at least similar) configurations. You can also use these techniques if you want to move lots of data from one location to another. (Many of the commands discussed in this article, particularly those dealing with disk images, are powerful enough to wipe out a working Linux system in a matter of milliseconds if misused. It is best that you first practise them on machines where it doesn't matter if you make a mistake.)

Copying methods

There are a number of ways to clone an existing installation of Linux, but they all fall into one of two categories: file-based or image-based. The file-based methods follow the conventional concepts of copying encountered using the `cp` command to read and write each file, and replicate data from one location to another. This isn't the most efficient way to copy an entire system. The image-based methods take a snapshot of your hard disk and copy it as an entire block, byte for byte.

The advantages of image-based copying include:

- It can duplicate the Master Boot Record (MBR) and partition table so you don't need to partition the disk you are copying to and you don't need to reinstall LILO.
- It duplicates the file system structure so you don't need to create a file system on the destination disk beforehand.
- It copies everything from the most primitive level of disk format, so you can clone a dual-boot DOS/Linux system without any extra work.

File-based methods also have several advantages, including:

- If the partitions or disks you are copying are mainly empty, it may be faster to use a file-based transfer.
- It's possible to use them with systems of differing hard disk size.

The last advantage makes a file-based copy more useful than an image-based copy, because an image-based copy must be performed between disks or partitions that are exactly the same size or where

the destination disk is larger. However, in the latter case, you will waste as much space on the destination disk as exceeds the partition size. Unless your machines really do have identical hard disks (and are set up identically in the BIOS), file-based copy is safest.

Image-based copying

Without networking the two computers, the easiest way to make a copy is to attach your new hard disk to the machine with the disk you want to copy from. If the disks are IDE and you are putting them on the same controller cable, don't forget to adjust the jumper settings on the destination disk so that it is configured as the slave.

Before you attempt to copy, it is best not to have any partitions on your source disk mounted read/write to ensure your data is stable; if you don't, you'll need to run `e2fsck` when you boot it on the new machine. There are a few ways to ensure this, but the most common is to boot from a floppy-based Linux distribution such as Tom's Root/Boot disk (also known as 'tom-srvtb'). `tom-srvtb` includes all the utilities mentioned in this article. The disk is available for download from Tom's Web site at <http://www.toms.net/rb/>, and there is an Australian mirror at <http://ftp.aarnet.edu.au/pub/linux/tom-srvtb/>.

The basic command for image-based copying between two identical hard disks that are installed in the same machine (see figure 1) is very simple:

```
dd if=/dev/hda of=/dev/hdb bs=1024k.
```

Here `/dev/hda` is the device name to copy from, and `/dev/hdb` is the device name to copy to ('if' stands for 'input file', 'of' stands for 'output file' and 'bs' sets the block size, which will make the copy run more efficiently). It is essential that you haven't mounted anything on the destination disk, otherwise the copy you make will be corrupted.

That's all there is to it. There's no need to manually partition the new disk or install LILO, as that's copied in the process. You can remove the hard disk, reset it as a master, install it in your new system (assuming it is an identical system to the source) and it will boot.

Learning how to clone the Linux setup.

By Geoffrey Bennett

Copying over a network

If you don't mind fiddling with your hardware, then the direct disk-to-disk image copy described above is probably the simplest. If not, duplicating your disk over a network may be an easier method (see figure 2). `tom-srvtb` is invaluable in this case because it includes Ethernet card support and everything else you will need to do a remote copy.

You will need to use `tom-srvtb` to boot both the source system and the destination system. `tom-srvtb` will probe most Ethernet cards automatically at boot time, and can be set up with two commands like this:

```
ifconfig eth0 10.0.0.2 netmask 255.255.255.0 broadcast 10.0.0.255
```

```
route add -net 10.0.0.0
```

The four IP addresses above are the IP address, netmask, broadcast address and network address respectively. If you have a domain name server present on your network, place its details in `/etc/resolv.conf`, otherwise just remove that file.

If you can ping between the two computers, then copying between them is just a couple of steps away. On the destination computer, edit `/etc/inittab` and remove the # from the beginning of the `rshd` line, then type `kill -HUP 1`. This enables the `rshd` (remote shell) server, which can be used to help copy images to that machine. You'll also need to put this line in the `/rhosts` file on the destination computer (substitute 10.0.0.1 with the IP address of the source computer) 10.0.0.1 root.

To test the `rshd` setup, you can type `'rsh 10.0.0.2 echo test'` on the source computer, which should output 'test'. Once it is working correctly, stay with the source computer and run the network equivalent of the previous disk image copy command by typing `dd if=/dev/hda | rsh 10.0.0.2 dd of=/dev/hda`.

Image files

Sometimes you may want to save a disk image to a file rather than copy it directly to another hard disk. This is simple as long as you have enough disk space to store the image. Set up `rshd` with `tom-srvtb` as

described above on the machine with the disk you want to copy from, and run `rsh 10.0.0.2 'dd if=/dev/hda1 | gzip' > diskimage.gz` on the Linux box that you want to create the image file on.

The `'l gzip'` in the command will compress the disk image, so if you don't want the image compressed then leave that out.

Once you've got the image in a file, you can write it back out to a machine running `tomsrft` with `rshd` enabled by running `rsh 10.0.0.2 'gzip -d | dd of=/dev/hda1' < diskimage.gz`.

Tom's Root/Boot disk

Because `tomsrft` exists entirely in RAM once it has been loaded from the floppy, any changes you make will be lost when you reboot. If you have to repeat this process more than once or twice it will get tedious, unless you customise the disk. Two scripts are included in the `tomsrft` package to assist you; one script will unpack the files from the floppy so that you can make whatever changes you want to, and the other script will create a personalised copy of `tomsrft` based on your customisations.

File-based copying

File-based copies of a hard disk require more work than an image-based copy, because you need to partition the destination disk and create a file system before you begin to copy. This can be done by temporarily installing the destination disk as a slave drive on the source Linux system and conducting the disk preparation and copy procedure from the one location. Alternatively, you can use `tomsrft` to boot up and prepare the disk on a clean system, establish a network connection to the source system and then initiate a file-based copy.

You will need `fdisk`, `mke2fs` and `mkswap` to partition the destination disk and create a file system. You will need to create both a Linux file system partition and a Linux swap partition using `fdisk`,

and then format them using `mke2fs` and `mkswap` (substitute `/dev/hdb1` and `/dev/hdb2` with the appropriate partition device names).

Now you've got a Linux file system, you need to mount it somewhere so that you can copy the files to it:

```
mkdir /mnt/new
mount -t ext2 /dev/hdb1 /mnt/new
```

If you've got both disks in the same computer, you can use `tar cf - / —exclude /proc —exclude /mnt/new | (cd /mnt/new; tar xpf -)` (all on one line) to copy everything to `/mnt/new`.

Breaking it down, the part to the left of the `|` reads the source files. The options to `tar` specify:

- **c** create archive (ie. read files)
- **f** output to stdout (ie. to the second `tar` command)
- **/** starting from the root directory (ie. copy everything)
- **—exclude . . .** excludes the `/proc` and `/mnt/new` directories from being copied.

If you are running a version 2.2 kernel, you should also exclude `/dev/pts`, and if you have any DOS or Windows partitions mounted, you'll probably want to exclude these too.

The part to the right of the `|` writes, the `cd` command specifies where the files will go, and the `xpf -` options mean:

- **x** extract archive (ie. write files)
- **p** preserve permissions (if you don't specify this, not all files will be created with the correct permissions)
- **f** - read from stdin (ie. from the first `tar` command)

After the files have been copied, you'll need to run `'mkdir /mnt/new/proc'` (and `'mkdir /mnt/new/dev/pts'` if you excluded that too). Although their contents shouldn't be copied, the directories themselves still need to be created.

If you want to copy your file system's contents across a network, `tar cf - / —exclude /proc | rsh 10.0.0.2 'cd /mnt/new; tar`

`xpf -'` copies all the files from the host machine to the `/mnt/new` directory on a remote machine.

You can put the entire contents of a remote file system into one large file on the machine if you run this command on:

```
rsh 10.0.0.2 'tar cf - —exclude /proc | gzip' > myfiles.tar.gz
```

And to put the files back:

```
rsh 10.0.0.2 'cd /mnt/new; gzip -d | tar xpf -' > myfiles.tar.gz
```

After you've finished your file copy, the final step is to make the hard disk bootable by installing LILO. If you copied your files directly from disk to disk, put the hard disk in a new machine and boot the system using your `tomsrft` floppy. If you copied your files via a network you can simply boot your system using the `tomsrft` floppy. When you've logged in, mount the hard disk with a command such as `'mount -t ext2 /dev/hda1 /mnt'` and then run:

```
cd /mnt
chroot /mnt /bin/bash
```

The `chroot` command changes your shell's environment so that it looks like `'/mnt'` is the root directory. This lets you run programs from your hard disk as if you had booted from the hard disk rather than the floppy. Now you can run the LILO installation by typing:

```
/sbin/lilo
exit
umount /mnt
```

Now your original system has an identical twin.

Geoffrey Bennett can be contacted at geoffrey@netcraft.com.au. For a complete archive of APC Linux columns, see <http://apcmag.com/linux/>.

Linux freeware

Xsnow

A Christmas amusement for the Linux desktop.

Mtools

A set of tools for handling MS DOS-format floppy disks so you no longer have to mount and unmount the disks.

Bashrc

Bashrc presents some handy command shell customisations.

Check Book Balancer

Check Book Balancer (CBB) is a simple GUI-based personal finance application.



All these packages can be found on this month's **apcmag.cd**, along with more detailed reviews.

Simple C++

Classes are the building blocks of object oriented programming (OOP). A class is a template definition of an object, describing the data and functions (methods) of a particular type of object. This month you'll learn more about classes and how to use them.

In the sample class shown in listing 1 (see page 166), the line `class foo` indicates the name of the class. The class members — both data members and function members (methods) — are listed inside the braces. You can see that some of these members are *public*, while others are *private*. Public members can be accessed from outside the class, while private members can only be accessed from inside the class.

The first three members, `foo()`, `foo(int val)`, and `foo(double num, int val)`, are each instances of a special method called a *constructor*. A constructor is called when an object is created and it always has the same name as the class. So in this case, every time an object of class `foo` is created, a constructor method is called.

Listing 2 shows you three ways to instantiate (create) a `foo` object (see page 166). The second of these, `foo yourfoo(5)`, has an integer parameter (5) so the second constructor is called. The first object, `myfoo`, is created without any parameter, so the first constructor is executed. You can have as many constructors as necessary to allow the object to be instantiated in different ways and the constructors can accept nearly any combination of parameters. You cannot, however, instantiate an object with parameters for which you don't have a constructor. If listing 2 contained a line such as `foo anotherfoo(2, 4, 5)`, it would cause an error because there is no constructor that handles three integer parameters. Notice that none of the constructors have a return type; constructors never return a value.

The line after the constructors, `~foo() void`, is called a *destructor*. Just as a constructor is executed each time an object is instantiated, a destructor is executed when the object is destroyed. Frequently an object

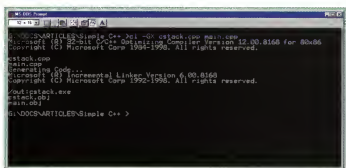
will allocate memory, open a file or perform some other task that uses up system resources. Just as it's good practice to perform tasks like this in the constructor, it's good practice to free those resources in the destructor. If the constructor opens a file, the destructor often closes it. If the constructor allocates memory, the destructor often frees that memory. This symmetry (hopefully) ensures that resources are automatically freed. This means there is one less thing for the programmer to worry about. A destructor always has the same name as the class, but is prefixed with a tilde (~) character.

The next part of the class is the data member, `ExtData`. This data member can be accessed from outside the class, just as it is in listing 2. In general, this is considered bad practice. One of the cornerstones of OOP is *encapsulation or information hiding*. If data can be accessed or even changed by any part of the program, then that data is not encapsulated. If you later change the definition of that data, you will probably break the program — possibly in multiple places. A better solution is to declare all data members *private*, and provide public functions to get and set their values. This strategy is used for the data member `IntData`; the methods `SetData` and `GetData` are provided for its access.

Notice that the code for the method `GetData` is included in the class declaration (see listing 1). `GetData` is implemented as an *inline* function. Inline functions are generally much faster to execute than normal functions, but they use up more memory. `SetData` is not inline, so it will be implemented separately.

Like the private data members, private methods can only be called from within the class.

Understanding and using classes in object-oriented programming. By Michael Smith



Listsings 3, 4 and 5 show a working example of a program, which uses a class (see page 166). The class, `CStack`, is declared in `CStack.h` (listing 3). The class has a constructor and a destructor, as well as two public methods: `Push` and `Pop`. Although there is only one constructor, it provides a default value for its parameter, so the parameter can be omitted. The `CStack` class is therefore instantiated with one argument (`CStack s(100)`) or no argument (`CStack s`). The latter form uses the default size of 1000. The `Push` and `Pop` methods act much as you would expect, returning a Boolean `true` or false value

The sample program

Building the sample program, `CStack.exe`, is relatively easy. It was built using three of the most popular Windows compilers, but you can use any standard compiler with little difficulty.

Using Microsoft Visual C++ 6.0, the command is `cl -GX cstack.cpp main.cpp`.

For Borland C++ 4.0 it is `bcc32 cstack.cpp main.cpp`.

Using the DJGPP GNU C++ compiler the command is `gxx cstack.cpp main.cpp -o cstack.exe`.

The command should be the same for the GNU compiler on Linux or any other platform, except you should probably change `-o cstack.exe` to `cstack` on Linux/Unix platforms.

C++ source code

Listing 1: Sample class

```
class foo {
public:
    foo( void );
    foo( int val );
    foo( double num, int val );
    ~foo( void );
    int ExtData;
    void SetData( int val );
    int GetData( void )
    { return IntData; }
private:
    int IntData;
    int ChangeData( void );
};
```

Listing 2: Using the sample class

```
// Instantiate an object
// of type "foo"
foo myfoo;
// Instantiate other objects
// using the alternate
// constructors
foo yourfoo( 5 );
foo theirfoo( 4.1, 2 );

// Access the public data
myfoo.ExtData = 6;
// Access a public method
yourfoo.SetData( 2 );
```

Listing 3: CStack.h

```
class CStack {
public:
    CStack( int size=1000 );
    ~CStack( void );
    bool Push( int val );
    bool Pop( int &val );
private:
    int *buff;
```

```
int count;
int buffsize;
bool Expand( int size );
};
```

Listing 4: CStack.cpp

```
#include <iostream>
#include "cstack.h"

CStack::CStack( int size )
{
    count = buffsize = 0;
    buff = NULL;
    Expand( size );
}
```

```
CStack::~CStack( void )
{
    delete [] buff;
}

bool CStack::Push( int val )
{
    if (count==buffsize)
        if (!Expand(2*buffsize))
            return false;
    buff[count++] = val;
    return true;
}

bool CStack::Pop( int &val )
{
    if (count) {
        val = buff[--count];
        return true;
    } else {
        return false;
    }
}
```

```
bool CStack::Expand( int size )
{
    int i;
    int *tmp = new int [size];
    if (!tmp)
        return false;
    if (count>size)
        count = size;
    if (buff) {
        for (i=0; i<count; i++)
            tmp[i] = buff[i];
        delete [] buff;
    }
    buff = tmp;
    return true;
}
```

Listing 5: main.cpp

```
#include <iostream>
#include "cstack.h"

int main( void )
{
    CStack s(50);
    int val;

    do {
        std::cin >> val;
        s.Push( val );
    } while (val!=0);

    while (s.Pop( val ))
        std::cout << val << '\n';
    return 0;
}
```

apcmag.cd

(true = operation succeeded, false = operation failed). When you look under the hood (the private members), you see that the stack is implemented using an array that is resized, as needed, by an Expand function. This is a good example of encapsulation. The public interface doesn't indicate how the stack is implemented, so you can change that implementation without affecting the rest of the program. You simply have to keep the interface constant.

If you look at CStack.cpp (listing 4), you can see the implementation of the class methods. Each method declared in a class (except any inline ones) should be implemented in a C++ file. In this example the constructor allocates a buffer for the stack

data using Expand. The buffer is later freed by the destructor. The constructor also initializes all of the data members to appropriate starting values. The Push method expands the buffer, if needed, then stores the data being pushed. It can only fail if the memory allocation fails. The Pop method removes a data value and passes it back to the calling program. It can fail if you try to Pop from an empty stack. The Expand method allocates a new (bigger) buffer, then copies any data values from the old buffer and frees the old buffer.

The encapsulation provides a few safety features. First, the main program cannot access the data buffer directly, which allows the CStack object to maintain integrity of the data without any fear that it will be

manipulated. Second, the resizing of the buffer is done using a private method. This means that the program cannot adjust the buffer size (and possibly mess it up). If you choose to change the implementation to use a linked list or even a database engine, the calling program won't change.

The final part of the puzzle is the main program, Main.cpp (listing 5). A CStack object is instantiated and then used to push some values onto the stack, then pop them off again. This is an example of simple C++ working at its best.

Michael Smith can be contacted at emmenjay@zip.com.au. For a complete archive of APC Simple C++ columns, see <http://apcmag.com/simple/>.

Using checkboxes and radio buttons. By David Williams

Java

Everyone has seen a checkbox — it's a little box that is either ticked or not, or crossed or not. It represents a setting that is either turned on or off.

A radio button is similar in that it is used to turn settings on or off, but it is used to select one of several options in a group. Only one radio button in the group can be selected at a time. When you select a radio button, every other button in the same group is deselected.

In short, a checkbox is used to toggle individual settings on or off, while a radio button is used to select one option from several alternatives.

Imagine you were creating a pizza ordering applet. The order screen would probably ask what type of pizza is being ordered — cheese, pepperoni, seafood or meat lovers. In this case, you would use a set of radio buttons because you want the customer to make one choice from a specified set of alternatives.

The screen could also ask if the customer wants to order additional items like garlic bread. Because the customer has a choice, you would use a checkbox so the customer can tick the appropriate box to indicate whether they want to order additional items.

Such an applet can be found in listing 1 and the corresponding HTML code is shown in listing 2 (see page 168).

Astute APC readers will notice that a radio button is never referred to in the listing. In reality, Java only defines a 'Checkbox' graphical object. A Checkbox is a Boolean entity that represents TRUE when it is checked and FALSE when it is empty. To place a checkbox in a window, you create an object of class Checkbox, supplying the checkbox's label as an input parameter as shown below:

```
Checkbox CheckboxReference = new Checkbox(
labelString);
```

The checkbox appears empty and its label is located to the right of the box.

The state of a checkbox can be set with the `setState` method to give it an initial value of checked or unchecked. This call is defined:

```
CheckboxReference.setState (booleanValue);
```

A Checkbox object is, by itself, a checkbox as described above. Adding multiple Checkbox objects to a window creates multiple checkboxes as you would expect, and each is independent. Checking one checkbox has no effect on the state of any of the other checkboxes.

Java defines radio buttons as a group of checkboxes. So, for each group of radio buttons, you must create an object of the class `CheckboxGroup`. Then, as checkbox objects are added to a panel, you simply specify that they are part of a group. Any checkbox associated with the group takes on the behaviour of a radio button, as described above. Checking any checkbox in a group will clear any other checkbox in the same group. Your program simply needs to create the checkbox group, add the checkboxes to the group, and then let the checkbox group class take care of itself.

To begin this process, create a checkbox group object:

```
CheckboxGroup CheckboxGroupReference =
newCheckboxGroup ();
```

To add the checkboxes to this group so they will appear as radio buttons, simply create objects of the `Checkbox` class, but use a different constructor from the one used when creating a standalone checkbox:

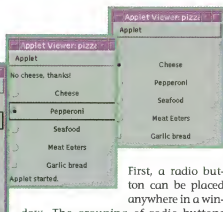
```
Checkbox CheckboxReference = new Checkbox(
label, checkboxGroupReference, initialState);
```

So, for example, to create the radio button for a cheese pizza, you write:

```
cheese = new Checkbox ("Cheese",
pizzaType, true);
```

Note that the variable `pizzaType` contains a reference to the checkbox group with which this checkbox object is to be associated.

There are several things that you need to keep in mind when creating radio buttons.



First, a radio button can be placed anywhere in a win-

dow. The grouping of radio buttons occurs solely when the checkbox object is created, not when the object is added to a panel. In theory, there is no reason why the radio buttons in a group have to be physically located next to each other, nor is there a reason why radio buttons in different groups cannot be located next to each other. Of course, doing either of these may be confusing for the user.

Second, only one checkbox object in a checkbox group can ever have a state of TRUE at any given time. All the rest will always be FALSE.

Third, although each radio button will appear with its own label, there is actually no way to label the checkbox group itself. Therefore, it is often helpful to place all the checkboxes within a group in their own panel with a descriptive label.

Now you can create checkboxes and radio buttons. You can even set the state of a checkbox (or radio button, because a radio button simply is a `Checkbox` object; the `setState` method works just the same). To query the value of a `Checkbox`, you can use a call to the `getState` method by writing:

```
boolean variable = checkboxReference .get-
State ();
```

This means that in any event-handling procedure, such as a button-click, the value of all checkboxes and radio buttons can be queried. Note that because each radio button is really a separate checkbox, each one can have its value queried, but only one will have the value TRUE.

It is also possible to respond to the event raised when the user clicks a checkbox. In this case an `ItemEvent` is raised. To make a program respond to an item

Java source code

Listing 1: Pizza ordering applet

```
import java.applet.*;
import java.awt.*;
import java.awt.event.*;

public class pizza extends
Applet implements ItemListener
{
    private CheckboxGroup piz-
zaType;
    private Checkbox cheese, pep-
peroni, seafood, meat, gar-
licBread;
    private Label theLabel;

    public void init ()
    {
        Panel p = new Panel ();
        p.setLayout (new GridLayout
(6, 1));
        theLabel = new Label ("");
        p.add (theLabel);
        pizzaType = new CheckboxGroup
();
        cheese = new Checkbox
```

```
("Cheese", pizzaType, true);
        cheese.addItemListener
(this);
        p.add (cheese);
        pepperoni = new Checkbox
("Pepperoni", pizzaType, false);
        pepperoni.addItemListener
(this);
        p.add (pepperoni);
        seafood = new Checkbox
("Seafood", pizzaType, false);
        seafood.addItemListener
(this);
        p.add (seafood);
        meat = new Checkbox ("Meat
Eaters", pizzaType, false);
        meat.addItemListener (this);
        p.add (meat);
        garlicBread = new Checkbox
("Garlic bread");
        p.add (garlicBread);
        setLayout (new BorderLayout
());
        add (p, "Center");
    }
}
```

```
public void itemStateChanged
(ItemEvent theEvent)
{
    if (cheese.getState ()
theLabel.setText ("Yummy
cheese!");
    else
        theLabel.setText ("No
cheese, thanks!");
}
}
```

Listing 2: HTML code

```
<html>
<head>
<title>Pizza shop</title>
</head>

<body>
<applet code="pizza.class"
width="200" height="200"></applet>
</body>
</html>
```

apcmag.cd

event, you must register an item listener with the checkbox (see APC September, page 159). This means a new method, `itemStateChanged`, must be implemented in whichever class responds to the event. The sample pizza program does this to display a simple message whenever the cheese pizza is selected. Normally it would not react to a click on a checkbox or radio

button in such a way, but it helps demonstrate that the program can respond to such events if necessary. If you want to handle an event for any radio button within a group, then all individual checkboxes that make up the group must have an event handler registered for them; you cannot register an event handler for the group as a whole.

Over the next few months, you will continue to learn about visual elements that help you create effective user interfaces for your Java applets.

David Williams can be contacted at dave@qed.newcastle.edu.au. For a complete archive of APC Java columns, see <http://apcmag.com/java/>.

I Have too many Monitors!

Monitors are a waste of Space!

8-port KVM Switch

From:

\$1999

Includes FREE Offer



For more information
Freecall
1800 680 086

The AutoView allows you to control up to 64 computers using a single keyboard and mouse.

This creates more space in your office and allows you to save on expensive hardware.

On Screen Display helps you navigate easily across your servers and password access keeps the system secure.

Distance isn't even a problem, ask about LongView.

LongView provides access via a single Cat V cable from up to 150 metres away from the server room.

Our KVM solutions start with the 2 port (SwitchView) from \$315 up to 3048 ports with multiple users on almost any hardware platform with the Commander 4XP.



**FREE SwitchView or
 Cables Offer!**

** Conditions Apply

Cybox Distribution
 P O Box 455
 Nundah, Qld, 4012
 Australia

Phone: +61 7 3250 7799
 Fax: +61 7 3257 1700
 E-mail: brsales@blueridge.com.au
 Web: www.blueridge.com.au



** Offer valid on AV-8b & AV200R-8 models, includes your choice of a SwitchView 4 or 4 x 1.8 or 2.8 mtr cables

Seasons Greetings from Adelong Computers

December 1999



4 Easy Ways to Order

Phone: 02 8344 3190

Fax: 02 9697 9777

Email: sales@adelong.com.au

Web: www.adelong.com.au

INDEX

Systems/Notebooks

Palm PDAs	2
Everex PCs	3
Athlon PCs	3
Adelong PCs	4.5
Toshiba	6
IBM	6

Components

Intel CPUs, AMD CPUs	7
Memory	7
Apex Mainboards	8
Gigabyte Mainboards	9
Asit Mainboards	9
Adaptec	9

Hard Drives

Western Digital	10
Seagate, IBM, Quantum	11

Sound/Audio

Diamond Multimedia	12
Montego	13
Altec Lansing	14
Skywell	15

Display Cards

Diamond Multimedia	12
Matrox	13
3DFX	14

Input Devices

Skywell Magic	15
Microsoft	16
Logitech	16

Monitors

LG	20
Mitsubishi	21
VideoCom, Panasonic	22

Storage

Verbatim	23
Iomega	24
ORB Drive	25
Rioch	25

Printers/Scanners

Epson	26
HP Scanners	26
Canon	27
HP Printers	28.29
Samsung	29

Networking

D-Link	16
Intel	17
Modems	18
D-Link	16
Swan	19
Netcomm	19
US Robotics	19
Dynalink	20

Miscellaneous

Logic USB	15
Data Switches	30
USB Devices, Cases	31
Terms & Conditions	32
Order Form	32

ADELONG SOHO ADVANTAGE

- 64MB SDRAM
- 3.5" 1.44MB Floppy Drive
- 6.4GB Ultra ATA Hard Drive
- 8MB AGP Dynamic Video Memory
- 15" Colour Monitor
- 40X CD-ROM Drive
- 3D SoundCard with A3D
- 100Watt Stereo Speakers
- Integrated 56K V.90 Modem
- Minitower Case
- Mouse & Keyboard
- Windows 98



Intel® Celeron™ 433Mhz

\$1375 SYADE067

Intel® Celeron™ 500Mhz

\$1495 SYADE098

Intel® Pentium® III 450Mhz

\$1595 SYADE101

Intel® Pentium® III 500Mhz

\$1695 SYADE102

Sales Hotline 02 8344 3190

Aztech 56K USB Modem

Compact design to complement all notebooks and PCs.



\$99

FHAZT000

Special upgrade bundle

Including an AMD K6-2 400Mhz Processor, Gigabyte GAA Mainboard and all Minitower Case.



\$325

SPADE000

Adaptec CD Creator V4

Easily create data, audio and multimedia CDs on your PC



\$126

SWACD000

Delta 4x4x20 CDRW Drive

The best value CDRW drive in Australia. Easy installation, everything you need is in the kit.



\$395

MMDEL001

see page 22

Net Slider

The only online gaming modem on the market. This modem is tweaked for ultimate gaming performance. Have an advantage over your opponents, have the Slider.



\$179

FHWSA005

see page 19

10x DVD

Get the latest in multimedia technology at the price of older generations drive. AOpen's 10x DVD drive uses the latest technology to bring you picture perfect DVD movies and DVD multimedia.



\$265

MAACED09

see page 8

Corporate, Government and Educational Departments Call Our Strategic Account Managers On: (02) 8344 3188
RESELLER INQUIRIES WELCOME

Adelong Computers

Established in Australia since 1991

At Adelong making customers happy with their purchase is a priority. If you find a product cheaper elsewhere, call us. We will always try to offer better prices than our competitors. Remember our free advice can save you a small fortune. It's all part of our commitment to providing a better service to all our customers.

Adelong makes it so easy to purchase. Simply,

Phone: 02 8344 3190

Fax: 02 9697 9777

Email: sales@adelong.com.au

Web: www.adelong.com.au



Head Office/Call Centre



City Store



Shop securely anytime, anywhere on the web

City Store: 127 York Street, Sydney NSW.

Head Office & Store: 54 Rosebery Avenue Rosebery NSW.

Digital Assistant

**PURCHASE A PALM PILOT AND
TAKE ADVANTAGE OF THIS
EXCLUSIVE OFFER**

PALM ACCESSORIES PACK VALUED

at \$180 for

\$50

PAC0006



**Palm III™
Connected Organizer**

- 2MB RAM Stores 6000 Addresses, 5 Years of Appointments,
- Backlit Display with Infrared (IR) Communication
- Holosync Cradle for instant one button information transfer
- Use 2 x AAA battery

Imagine having your daily schedule, important phone numbers, lists, meeting times and more in one organized place. It's easy and affordable with a new Palm III™ connected organizer*. And at just 4.7" tall and a mere 6 oz., it can go wherever you go - be it work, home, school or on vacation.

\$439

PAC0003

**Palm V™
Connected Organizer**

- 2MB RAM Stores 6000 Addresses, 5 Years of Appointments, 1500 memos and 200 Email Messages
- Lithium-ion battery automatically recharges in HotSync® cradle for up to a month's operation
- Allows Palm OST software upgrades via Internet download.
- TCP/IP Ready for Internet Connectivity with optional modem

The new Palm V™ weighs just 113grams, its ultra-thin exterior betrays its organizational power. With 2Mb of memory you'll have thousands of names, addresses, phone numbers, appointments, to-do's, plus hundreds of e-mail messages at your fingertips. It also features an advanced LCD screen that is razor sharp for clear viewing.

\$749

PAC0002

Modem for Palm V \$325

PAC0004



Rent Smart
It's smarter business to rent.

Get Smart...and rent instead!

RentSmart is the smart decision for small, medium and large business, self employed or sole traders and professional employment people*



KEEP YOUR MONEY

Get the business equipment you need and use your working capital in more profitable ways.



SPREAD YOUR COSTS

Affordable monthly repayments are spread over the useful life of the equipment, usually 2-4 years.



FULLY TAX DEDUCTIBLE

Rentals are 100% tax deductible when your equipment is used solely for business purposes.



OUT WITH THE OLD, IN WITH THE NEW

Upgrade to new technology or add new equipment when you need to.



GET MORE EQUIPMENT

Bundle together a range of business equipment into one RentSmart plan.



EASY 10 MIN. APPROVAL

We can approve the purchase of office equipment worth up to \$15,000 in just 10 minutes.

INTERNET WEB SITE:
<http://www.adelong.com.au>
e-mail: info@adelong.com.au

HEAD OFFICE & SERVICE
54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 8344 3188
Fax: (02) 9697 9777

CITY OFFICE
127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5042

Adelong Computers

explora

Everex Systems



Explore the Internet with the new range of Everex Explora PCs. Featuring ultra fast computing with variety of software applications to get you started immediately. Choose from either an introductory MP400 Model or go for the top of the line MP450X Model with DVD capabilities and take advantage of our special Canon bundle.

SPECIAL
Canon BJC-265
\$99*



Explora MP400

Processor AMD K6-2 400Mhz
Memory 32MB SDRAM
Hard Disk Trident Cyber Blade 4MB AGP
Display Card 15" Colour Monitor
Monitor 40X CD-ROM
CD-ROM 16bit PCI Audio
Sound Card 120Watt Stereo Amplified Speakers
Speakers PS/2 Mouse
Mouse 104 key WIN95 Keyboard
Keyboard 56K Soft Modem
Modem MS Windows 98 Second Edition, Lotus Smart Suite, Lotus Notes R5 Client, IBM Perfect Photo, Winfax Lite, Norton Anti-virus, Acrobat Reader.
Reader. 2 Year Return to Base.

\$1195
SYEE000

Explora MP450X

Processor AMD K6-2 450Mhz
Memory 64MB SDRAM
Hard Disk 6.4GB Hard Drive
Display Card Trident Cyber Blade 8MB AGP
Monitor 15" Colour Monitor
DVD-ROM 6X DVD-ROM
Sound Card 16bit PCI Audio built-in
Speakers 120Watt Stereo Amplified Speakers
Mouse PS/2 Mouse
Keyboard 104 key WIN95 Keyboard
Modem 56K Soft Modem
Software MS Windows 98 Second Edition, Lotus Smart Suite, Lotus Notes R5 Client, IBM Perfect Photo, Winfax Lite, Norton Anti-virus, Acrobat Reader, Power DVD. 2 Year Return to Base.

\$1495
SYEE001

As Reviewed in APC December 99

AMD Athlon

Adelong Athlon PC

Adelong Athlon MP550



\$2945
SYADE103
Bestmatch \$27.25 per week*

As Reviewed
in APC
December 99

- 128KB L1 Cache
- 64MB 100MHz SDRAM
- 13GB Ultra ATA Hard Drive
- 16MB Matrox Millennium G400 AGP
- Turtle Beach Montego II Audio
- 6X DVD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS45 Speakers
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft® Intellimouse
- Microsoft® Windows 98
- 2 Year Limited Warranty

Call for Custom Configurations

Systems may vary to that shown in picture.

* 3 YEAR ON SITE WARRANTY \$100

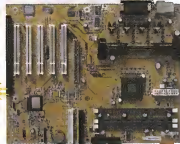
*Conditions Apply



The first mainboards on the market to support the Athlon™ processor and recommended by AMD. The ATX sized FIC SD11 supports the AMD Athlon™ processor at mouthwatering speeds of 500-650 MHz @ 200Mhz System bus

- AMD 751 and VIA 686A Chipset
- Up to 768MB SDRAM for 3 x DIMM Slots
- 2 x EIDE Controller with UDMA/66
- 1 x Serial, 1 x Parallel, 2 x USB Ports
- 1 x AGP, 5 x PCI, 1 x ISA Expansion Slots

\$315
MBFIC000



Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3190

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME

*Please read our Terms and Conditions

Adelong Computers

Adelong Systems

ADELONG ADVANTAGE PRO

For those who want the power to run Multimedia and Internet applications with ease.

Ideal for users who are entertained by their PCs including gamers, multimedia enthusiasts and performance junkies. Advantage PRO systems feature awesome computing power, DVD playback and limitless multimedia functionality.



Systems may vary to that shown in picture.

Intel® Pentium® III Processor 450Mhz

- 512KB L2 Cache
- 64MB SDRAM
- 10GB Ultra ATA Hard Drive
- 3DFX 16MB Voodoo III 2000 AGP
- Turtle Beach Montego II Audio
- 6X DVD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS45.1 Speakers
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$2445*

SYADE084

Rentment \$24.25 per week**

Intel® Pentium® III Processor 500Mhz

- 512KB L2 Cache
- 64MB SDRAM
- 13GB Ultra ATA Hard Drive
- 3DFX 16MB Voodoo III 2000 AGP
- Turtle Beach Montego II Audio
- 6X DVD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS45.1 Speakers
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$2575*

SYADE085

Rentment \$25.15 per week**

Intel® Pentium® III Processor 550Mhz

- 512KB L2 Cache
- 64MB SDRAM
- 13GB Ultra ATA Hard Drive
- Diamond Viper V770 32MB AGP
- Diamond Monster MX300 Audio
- 6X DVD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS45.1 Speakers
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$2895*

SYADE087

Rentment \$28.95 per week**

Intel® Pentium® III Processor 600Mhz

- 512KB L2 Cache
- 128MB SDRAM
- 13GB Ultra ATA Hard Drive
- Diamond Viper V770 32MB AGP
- Diamond Monster MX300 Audio
- 6X DVD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS45.1 Speakers
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$3375*

SYADE104

Rentment \$33.75 per week**

Call for all Upgrade options

7-day customer satisfaction guarantee*

Technical support hotline

Fully Customizable

Finance Available

Call Our Sales Hotline 02 8344 3190

Email Order sales@adelong.com.au

Fax Orders 02 8697 8145

Online Secure Store www.adelong.com.au

3 YEAR ON SITE WARRANTY AUSTRALIA WIDE \$100 ***

*Based on a 24 month term. Subject to change.

***Conditions Apply

*Prices and specifications subject to change without notice

INTERNET WEB SITE:

<http://www.adelong.com.au>

e.mail: info@adelong.com.au

HEAD OFFICE & SERVICE

54 Roseberry Avenue
Sydney NSW 2018
Ph. (02) 8344 3188
Fax. (02) 8697 8177

CITY OFFICE

127 York Street
Sydney NSW 2000
Ph. (02) 9267 5272
Fax. (02) 9267 5042

Adelong Computers

Adelong Systems

ADELONG POWER ADVANTAGE

For those who demand reliability and value for money without sacrificing on performance.

Ideal for business use or home users who demand computing power with rock solid performance and reliability. Power Advantage systems come standard with 17" displays to enhance your productivity.

**Year 2000
Compliant**



Systems may vary to that shown in picture.

Intel® Celeron™ Processor 466Mhz

- 128KB L2 Cache
- 64MB SDRAM
- 6.4GB Ultra ATA Hard Drive
- 8MB AGP Graphics Accelerator
- PCI 4-Channel Sound with 256 Voices
- 50X EIDE CD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS22 Speaker
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft® Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$1795*

SVAD075

Rentment \$20 per week**

Intel® Pentium® III Processor 450Mhz

- 512KB L2 Cache
- 64MB SDRAM
- 10GB Ultra ATA Hard Drive
- 8MB AGP Graphics Accelerator
- PCI 4-Channel Sound with 256 Voices
- 50X EIDE CD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS22 Speaker
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft® Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$1995*

SVAD062

Rentment \$20.35 per week**

Intel® Pentium® III Processor 500Mhz

- 512KB L2 Cache
- 64MB SDRAM
- 10GB Ultra ATA Hard Drive
- Diamond Stealth S540 32MB
- PCI 4-Channel Sound with 256 Voices
- 50X EIDE CD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS22 Speaker
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft® Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$2225*

SVAD063

Rentment \$22.15 per week**

Intel® Pentium® III Processor 550Mhz

- 512KB L2 Cache
- 64MB SDRAM
- 13GB Ultra ATA Hard Drive
- Diamond Stealth S540 32MB
- PCI 4-Channel Sound with 256 Voices
- 50X EIDE CD-ROM Drive
- 17" Colour Monitor
- Altec Lansing ACS22 Speaker
- ATX Mid Tower Case
- 56K PCI V.90 Fax/Modem
- Microsoft® Intellimouse
- Microsoft® Windows 98
- Norton AntiVirus
- 2 Year Limited Warranty

\$2475*

SVAD099

Rentment \$24.15 per week**

Call for all Upgrade options

7-Day customer satisfaction guarantee*

* Technical support hotline

* Fully Customizable

* Finance Available

Call Our Sales Hotline 02 8344 3190

Email Order sales@adelong.com.au

Fax Orders 02 8687 8145

Online Secure Store www.adelong.com.au

3 YEAR ON SITE WARRANTY AUSTRALIA WIDE \$100***

**Based on a 36 month term. Subject to change.

***Conditions Apply

*Prices and specifications subject to change without notice

Sales staff are available (est)

9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support

(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME

*Please read our Terms and Conditions



Adelong Computers

ADTECH 30

6

REVO

VISA

citip

5

Notebooks

TOSHIBA

The Toshiba Satellite provides exceptional value without compromising performance or reliability. Excellent for multimedia, business or demanding applications, the Satellite's provide solid functionality all round.



Model	2540CDS	2540CDT	2590XDV	2590CDT	4090XCDT	4100XDV
Processor	AMD K6-2 333Mhz	AMD K6-2 333Mhz	Celeron 400Mhz	Celeron 400Mhz	Celeron 400Mhz	Pentium II 400Mhz
RAM	32MB	64MB	64MB	64MB	64MB	64MB
Hard Drive	4GB	4GB	6GB	6GB	4GB	6GB
CD-ROM	24X MAX	24X MAX	DVD	24X MAX	24X MAX	DVD
Display	13" DSIN	14.4" TFT	14.1" TFT	12.1" TFT	14.1" TFT	14.4" TFT
Warranty	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year
O/S	Windows 98	Windows 98	Windows 98	Windows 98	Windows 98	Windows 98
Price Rent	\$2335 <small>or Rentment \$32 per week*</small>	\$3225 <small>or Rentment \$39 per week*</small>	\$4545 <small>or Rentment \$47 per week*</small>	\$3575 <small>or Rentment \$32.54 per week*</small>	\$4325 <small>or Rentment \$39 per week*</small>	\$5720 <small>or Rentment \$49.15 per week*</small>

* Based on a 36 month rental

Built in 56k Modem

PC Systems

IBM NetFinity Server

The IBM Netfinity 3000 server is the new generation, value-priced foundation for your file-and-print serving, e-mail, shared Internet access and basic application serving needs. Designed for enhanced manageability in enterprise environments, the entry-level Netfinity 3000 is backed by the same extensive service and support provided with Netfinity mainstream and enterprise servers.

NetFinity 3000

Intel Pentium III Processor 500Mhz
64MB ECC SDRAM (768MB MAX)
9.1GB Ultra Wide SCSI Hard Drive
4MB Graphics Card
32X CD-ROM Drive
10/100Mbps Ethernet Adapter
5 x PCI and 3 x ISA Slots Available
Minitower Server Case

\$3995

SYBM013

Netfinity 3500

Intel Pentium III Processor
(Dual Processor Capable)
128MB ECC SDRAM (1024MB MAX)
9.1GB Ultra Wide SCSI Hard Drive
4MB Graphics Card
32X CD-ROM Drive
10/100Mbps Ethernet Adapter
5 x PCI and 3 x ISA Slots Available
Minitower Server Case

Intel Pentium III
500Mhz

\$4445

SYBM014

Intel Pentium III
550Mhz

\$5145

SYBM015



3 YEAR ONSITE WARRANTY*

Images Courtesy of International Business Machines Corporation. Unauthorized use not permitted

INTERNET WEB SITE:
<http://www.adelong.com.au>
e.mail: info@adelong.com.au

HEAD OFFICE & SERVICE
54 Rosebery Avenue
Rosebery NSW 2018
Ph. (02) 8344 3188
Fax. (02) 9697 9777

CITY OFFICE
127 York Street
Sydney NSW 2000
Ph. (02) 9267 5272
Fax. (02) 9267 5042

Adelong Computers

Processors

CALL OUR SALES TEAM FOR THE LATEST PRICING ON THESE PRODUCTS

Performance for the Home and Office Needs Intel Celeron Processor

Get great performance for your personal computing and office needs with the Intel Celeron Processors. Intel Celeron processors give you quick, responsive performance for today's business applications and provide cost-effective managed client solutions for any environment.



Code	Model	Price
CPINT026	Celeron 400Mhz PPGA	\$149
CPINT029	Celeron 433Mhz PPGA	\$169
CPINT030	Celeron 466Mhz PPGA	\$215
CPINT032	Celeron 500Mhz PPGA	\$325

Ultimate Gaming and Multimedia

Intel Pentium III Processor

The Intel® Pentium® III processor is Intel's most advanced, most powerful processor for desktop PCs. It offers performance for the next generation of the Internet as well as the reliability to run your most critical applications. Improved performance and features include:

- Streaming SIMD Extensions
- Amazing 3D
- Streaming Video and Audio
- Realistic Animation
- Speech Recognition



Code	Model	Price
CPINT027	Intel Pentium III 450Mhz	\$375
CPINT028	Intel Pentium III 500Mhz	\$499
CPINT031	Intel Pentium III 550Mhz	\$755
CPINT033	Intel Pentium III 600Mhz	\$975

Coming Soon Pentium III 700Mhz

The new Intel® Pentium® III processor based on a supercharged 133Mhz System Bus. Features 256KB of full speed L2 Advanced Transfer Cache

133Mhz

Code	Model	Price
CPINT038	Intel Pentium III 533B	\$715
CPINT039	Intel Pentium III 600B	\$1045

For use with VIA Based Chipset Mainboard. See page 9 for details

Coming Soon Pentium III 667 & 733

Excellent performance for those on a budget.

AMD K6-2 Processors

Code	Model	Price
CPAMD014	AMD K6-2 400	\$115
CPAMD018	AMD K6-2 450	\$145
CPAMD019	AMD K6-2 500	\$260



AMD K6-3 Processors

The AMD K6-3 processor takes Windows® 98 performance to greater levels. It provides the power you need to take control of your finances, run today's hottest education software, or navigate your way through the ever-expanding Internet with its innovative tri-linear cache design.

Code	Model	Price
CPAMD016	AMD K6-3 400	\$265
CPAMD017	AMD K6-3 450	\$345
CPAMD024	AMD K6-3 500	\$485

AMD Athlon Processor

The AMD Athlon processor's unmatched performance and next-generation features combine to give end users an unprecedented computing experience, whether running standard productivity software or the latest cutting-edge consumer, business, and scientific applications.



Code	Model	Price
CPAMD020	AMD Athlon 500Mhz	\$495
CPAMD021	AMD Athlon 550Mhz	\$775
CPAMD022	AMD Athlon 600Mhz	\$995
CPAMD023	AMD Athlon 650Mhz	\$c/call

PRICE DROP

BONUS DUAL FAN HEATSINK WITH ALL ATHLON CPUS

Heatsink and Fan Socket 7 CPU Fan

\$15 MSADE000



Memory

SDRAM

- 64-bit, 168 Pin DIMM Memory
- 100Mhz Speed
- For use with AMD K6-2/3 & Athlon, Pentium III/II and Celeron Processors
- Compatible with VIA, Intel TX, LX, BX, ZX Chipsets

ECC SDRAM

- Provides error checking and correction for mission critical servers and workstations.



EDO RAM

- 32-bit Memory
- Use with 486 and older Pentium systems
- Used in Pairs in Pentium Systems



Code	Model	Price
RAGEN024	32MB PC100 SDRAM	\$c/call
RAGEN025	64MB PC100 SDRAM	\$c/call

Code	Model	Price
RAGEN023	128MB PC100 SDRAM	\$c/call
RAGEN026	128MB ECC PC100 SDRAM	\$c/call

Code	Model	Price
RAGEN005	16MB EDO SIMM 72Pin	\$79
RAGEN006	32MB EDO SIMM 72Pin	\$145

Due to worldwide shortages, call for latest prices on SDRAM Memory

Sales staff are available [est]
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME

Please read our Terms and Conditions



Adelong Computers

Mainboards

AOpen

AOpen AX6BC Mainboard

Introducing the AOpen AX6BC Mainboard featuring the Intel BX Chipset. A unique jumperless design, CPU monitoring & protection circuitry combines ease of use with reliability and performance. Winner of many international awards you can be sure that the AX6BC Mainboard will work with you, not against you.



- Supports Intel Pentium II 233 - 450MHz, Pentium III up to 550MHz & Celeron Processors,
- 5x PCI, 2x ISA, 1x AGP x 2
- 768MB SDRAM for 3x DIMM slots
- 2x Serial, 1x Parallel, 2x USB Ports
- 2x EIDE Controller & ATX Form Factor
- Supports Wake on LAN, DMI, SB-LINK

Pentium III Ready

\$195

MBACE000

AOpen MX3W Celeron Mainboard

The AOpen MX3W supports the latest Celeron (PPGA) Socket 370 Processors to 500MHz. Powered by the Intel 810 DC100 Chipset and features jumper less design and an integrated 2D/3D Graphics Engine with Dynamic Video Memory.



- Supports Intel Celeron Socket 370 (300 - 500MHz)
- 66/100MHz Front Side Bus
- Integrated 4MB Video & AC97 SoundCard
- Up to 512MB SDRAM for 2x DIMM slots
- 3x PCI, 1x AMR (Audio/Modem Riser)
- 2x EIDE UDMA/66 Controller
- Micro ATX Form Factor

Integrated Video and Sound

Optional add on "Software Modem" **\$30**

MBACE010

\$225

MBACE005

AOpen AX63 Pro Mainboard

The AOpen AX63 Pro Mainboard brings true computing performance at a very affordable price. Powered by the advanced VIA Apollo Pro Plus AGP chipset the AX63 Pro Mainboard supports technologies such as Jumperless design, Resettable Fuse for USB & K/B, BIOS flash protection and CPU protection.



- Supports Intel Pentium II 233 - 450MHz, Pentium III & Celeron Processors to 700MHz
- Supports PCI33 133MHz RAM
- 5x PCI, 2x ISA, 1x AGP x 2 Expansion slots
- 768MB SDRAM for 3x DIMM slots
- 2x Serial, 1x Parallel, 2x USB Ports
- 2x EIDE Controller & ATX Form Factor3

133MHz SYSTEM BUS READY

\$195

MBACE007

AOpen MX59 Pro Mainboard

AOpen MX59 Pro Mainboard Supporting the latest Socket 7 offerings from Intel, Cyrix & AMD the MX59 Mainboard also offers an integrated graphics card & sound card in one. Ideal for upgrades or budget PC offerings.



- Supports AMD K6-2 266-450MHz & K6-3 400-450MHz
- Supports Intel Pentium, MMX & Cyrix MII 300-366MHz
- 66/100MHz Bus speed
- 2D/3D Graphics Engine (4/8Mb shared memory) & AC97 Sound
- 2 Dimm Slots of Max. 512Mb Memory
- 4X PCI, 1X ISA, 2x EIDE UDMA/66
- Micro ATX

Integrated Video and Sound

Socket 7

\$175

MMACE004

AOpen 48X EIDE CD-ROM

- ATAPI IDE CD-ROM
- Ultra DMA Support
- 512Kbytes buffer
- Compatible with CD-DA, CD-ROM/XA, CD-I/MPEG, Photo CD, Karaoke CD, CD, CD-RW, Packet write
- Audio Extraction
- MAX Transfer rate 7200 Kb/sec

\$95

MMACE001

AOpen 10X EIDE DVD-ROM

- 10X DVD-ROM Transfer Rate Up To 13850 KB/sec
- 40X CD-ROM Transfer Rate Up To 6000 KB/sec
- Supported IDE / Ultra-DMA33 and MW DMA mode 2
- Supported CD/DVD Formats Including CD-R/RW and DVD-R/RW
- Slot-In Loading Mechanism / Vertically and Horizontally Use

\$265

MMACE007

AOpen 6X EIDE DVD-ROM

The AOpen DVD-ROM will allow you to watch the latest Hollywood blockbuster or play the latest multimedia titles on your PC today. Not only will the AOpen DVD-ROM play all your DVD media but also your existing CD, CDR & CDRW at 32X Max Speed.

\$199

MMACE008

BONUS DVD SOFTWARE

INTERNET WEB SITE:
http://www.adelong.com.au
e.mail: info@adelong.com.au

HEAD OFFICE & SERVICE
54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 9344 3188
Fax: (02) 9697 9777

CITY OFFICE
127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5042

Dual BIOS

Gigabyte Technology is pleased to introduce DualBIOS, a "hot spare" for your system BIOS. In the event that your primary BIOS fails, the second BIOS backs you up almost automatically. A feature found in the GA-BX2000, GA-5XU & GA-6BXDU boards.

GA-BX2000

- Intel BX Chipset Slot 1
- Support Intel Pentium II/III & Celeron Processors
- Supports 66/75/83/100/112/133Mhz System BUS
- 4 DIMM sockets to 1GB DRAM
- 5x PCI, 1x AGP, 2x ISA Expansion slots
- ATX Form Factor with USB



\$225

MBGIG004

GA-5AX

- ALI - Aladdin V AGPset
- Supports Intel Pentium to 233MMX, Cyrix to 333Mhz, AMD K6-2, K6-3 to 450Mhz
- 512KB Cache onboard
- 3 DIMM sockets to 768MB DRAM
- 5x PCI, 1x AGP, 2x ISA Expansion slots
- ATX Form Factor with USB



\$150

MBGIG005

Support
AMD K6-2

GA-6BXDU

- Intel 440BX AGP Chipset
- Dual Channel Ultra 2 Wide SCSI
- Support Dual Pentium II/III Processors up to 600Mhz
- Supports 66/100 Mhz & Auto Selection Clock
- 3x Ultra 2 SCSI, 1x Ultra SCSI Ports
- 4x PCI, 3x ISA Expansion Ports & 1x AGP Port



DUAL
PROCESSOR

\$865

MBGIG023

GA-5AA

- Ali Chipset, Socket 7
- Supports Intel Pentium to 233MMX, Cyrix to 333Mhz, AMD K6-2, K6-3 to 450Mhz
- Clock Multiplier 1.5 to 5.5X
- 3 DIMM Sockets to 768MB DRAM
- 1x AGP, 3x PCI, 2x ISA
- Baby AT Form Factor



\$145

MBGIG001

ABIT

ABIT BE6 Mainboard

The latest offering from ABIT features the Intel BX chipset based Slot 1 Mainboard supporting the Ultra DMA/66 IDE protocol and SOFT MENU™ technology.



- Supports Intel Pentium II/III and Celeron to 600Mhz
- 3 x DIMM sockets to 768MB SDRAM
- 2 x UDMA33/66 IDE Ports, 2 x UDMA33 Ports
- 1 x AGP, 5 x PCI, 2 x ISA Ports
- Onboard Serial, Parallel, USB and I/O

\$255

MBAB001

ULTRA 66

ABIT BP6 Dual Celeron Mainboard

ABIT announces the release of the World's First Dual Socket 370 motherboard, the BP6 doubly defies the limitations of Intel's BX chipset by offering both Dual Socket 370 CPUs and UDMA/66 IDE Ports satisfying even the most demanding users.



- Supports up to 2 x Celeron Processors to 500Mhz
- 3 x DIMM sockets to 768MB SDRAM
- 2 x UDMA33/66 IDE Ports, 2 x UDMA33 Ports
- 1 x AGP, 5 x PCI, 2 x ISA Ports
- Onboard Serial, Parallel, USB and I/O

\$285

MBAB002

DUAL
PROCESSOR

HotRod UDMA/66 PCI Accelerator

With the help of the ABIT Hot Rod 66 your motherboard can now support the new UDMA/66 specification. The new disc interface provides maximum disc performance using current PCI technology. Special 80-conductor cable is supplied reducing crosstalk and interference in addition to a simple plug and play installation process.

- UDMA/66 performance
- Includes Cables
- Simple installation



HOT

\$99

MBAB003

Adaptec

ADAPTEC 2906 PCI CARD FOR DESKTOP PCS

Connect up to 7 SCSI devices and gain great performance by moving to SCSI with the Adaptec 2906. Run your ZIP drive or Scanner up to 6 times faster than with a parallel port connection. Adaptec EZ-SCSI Software is included to help you manage your peripherals.



\$115

CCGEN021

ADAPTEC 2940U2W

Unleash the full potential of your server or workstation when it comes to boosting the performance of servers and workstations to 80Mb/s utilizing Ultra2 SCSI (LVD) technology. By combining the Adaptec 2940U2W with high-performance disk drives you'll get performance worth howling about.



RETAIL KIT \$709

CCGEN018

OEM \$455

CCGEN022

ADAPTEC USBConnect 2000

Connect up to 7 SCSI devices to your PC, Notebook or Macintosh. USB Connect 2000 converts a USB port to SCSI in seconds without tedious time-consuming restarts.



NEW

\$159

CCGEN019

Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME

*Please read our Terms and Conditions

Hard Drives

Western Digital

Sporting the industry's first **Ultra ATA/66** high speed data transfer feature, the new Caviar drives feature a maximum transfer rate of 66Mb/s. That's double the speed of its nearest rival. All Western Digital Caviar drives undergo 200 rigorous tests before shipping to ensure compatibility and reliability with all your existing hardware and software applications.

Desktop EIDE Drives

NEW

The WD Caviar family is the ideal solution for desktop personal computers and provides the best combination of performance and value for entry-level to mainstream PCs.

Code	Size (GB)*	Seek	RPM	Cache	Price
HOWES003	6.4GB	9.5ms	5400	2MB	\$245
HOWES005	10.2GB	9.5ms	5400	2MB	\$275
HOWES006	13.6GB	9.5ms	5400	2MB	\$310
HOWES007	20.5GB	9.5ms	5400	2MB	\$495

Performance EIDE Drives

NEW

Designed for high-end desktop PCs and single user workstations, WD Expert drives outperform ordinary EIDE and even low-end SCSI solutions with average speeds 20 percent faster than conventional 5400 RPM EIDE drives.

Code	Size (GB)*	Seek	RPM	Cache	Price
HOWES008	9.1GB	9ms	7200	2MB	\$335
HOWES009	18GB	9ms	7200	2MB	\$485



The Data Lifeguard feature is in every Western Digital hard drive. Data Lifeguard protects end user data by automatically detecting, isolating and repairing possible problem areas before data loss can occur.



* 1Gb = 1 Billion bytes



Protecting your Computer and peripherals.



BlackoutBuster (500 VA)

Is a UPS that has all the features to satisfy all your needs. Protects a standard PC for up to 25 mins.

\$285

PSPK000



Add the Powerpack

For increasing the power capacitor backup time of the system. One powerpack doubles the BlackoutBusters power. Doubles backup time to 50 mins.

\$270

PSPK003



Smartpack

Adding Smartpack allows BlackoutBuster to be monitored and controlled by a computer.

\$165

PSPK001

Code	Model	Price
PSPK000	Blackout Buster 500VA	\$285
PSPK001	Smartpack	\$165
PSPK002	MicroPack	\$65
PSPK003	Powerpack 500VA	\$270
PSPK004	Blackout Buster 1000VA with Smartpack	\$690



MicroPack

This is an attachment for auto magic shutdown of Windows, OS/2 and Novell network operating systems.

\$65

PSPK002



Emergency backup battery



Voltage protection



Power Surge protection



Internet line protection

INTERNET WEB SITE:
<http://www.adelong.com.au>
 e-mail: info@adelong.com.au

HEAD OFFICE & SERVICE
 54 Rosebery Avenue
 Rosebery NSW 2018
 Ph: (02) 6344 3188
 Fax: (02) 9697 9777

CITY OFFICE
 127 York Street
 Sydney NSW 2000
 Ph: (02) 9267 5272
 Fax: (02) 9267 5042

Adelong Computers

Quantum®



Quantum Fireball™ Plus KA

Blazing Performance and Rock-Solid Reliability for the Desktop

The Fireball Plus KA hard disk drive brings workstation-level performance to the desktop with a 7,200 RPM rotational speed, 8.5 millisecond (ms) average seek time, and a huge 512 kilobyte buffer. Its also the first disk drive to feature Quantums revolutionary Data Protection System (DPS) that verifies drive functionality in 90 seconds or less.

Code	Capacity	Spindle Speed	Interface	Price
HDQTM048	6.4GB	7200RPM	Ultra ATA/66	\$245
HDQTM049	9.1GB	7200RPM	Ultra ATA/66	\$255
HDQTM050	13.6GB	7200RPM	Ultra ATA/66	\$299
HDQTM051	18.2GB	7200RPM	Ultra ATA/66	\$449

Quantum Fireball™ CX

Solid Reliability and Performance at an affordable price

The new Quantum Fireball CX hard disk drive continues the award-winning Fireball legacy of industry-leading performance with rock-solid reliability.

Code	Capacity	Spindle Speed	Interface	Price
HDQTM052	6.4GB	5400RPM	Ultra ATA/66	\$205
HDQTM053	10.2GB	5400RPM	Ultra ATA/68	\$249
HDQTM047	13GB	5400RPM	Ultra ATA/66	\$285
HDQTM054	20GB	5400RPM	Ultra ATA/66	\$475

High performance disk solutions from Seagate catering for:

- High end multimedia & video applications (A/V)
- Graphics and 3D Applications
- Internet/Intranet based web servers
- High performance workstations, servers and super computers

Seagate Medalist Pro

Cost effective, high performance SCSI hard drives with 512K cache and a spindle speed of 7200RPM.

Code	Model	Capacity	Interface	Tr/Rate	Price
HDSGT028	ST36530W	6.4GB	Ultra Wide SCSI	40Mbps	\$559
HDSGT039	ST36140W	9.1GB	Ultra Wide LVD68	80Mbps	\$595

Seagate Barracuda

High Capacity, ultra high performance SCSI Hard Drives with a seek time of 7ms and a spindle speed of 7200RPM.

Code	Model	Capacity	Interface	Tr/Rate	Price
HDSGT014	ST39173W	9.1GB	Ultra Wide SCSI	40Mbps	\$735
HDSGT027	ST39173LC	9.1GB	LVD 80 Pin	80Mbps	\$735
HDSGT028	ST39173LW	9.1GB	LVD 68 Pin	80Mbps	\$735
HDSGT036	ST39173FC	9.1GB	Fibre Channel	100Mbps	\$735
HDSGT029	ST118273LC	18GB	LVD 80 Pin	80Mbps	\$1145
HDSGT037	ST118273FC	18GB	Fibre Channel	100Mbps	\$1145

Seagate Cheetah

Ultimate Performance and high-powered workstations. With an industry leading 10,000 RPM spindle speed & a cache buffer of 512K.

Code	Model	Capacity	Interface	Tr/Rate	Price
HDSGT001	ST39102LC	9.1GB	LVD 80 Pin	80Mbps	\$1075
HDSGT035	ST39102FC	9.1GB	Fibre Channel	100Mbps	\$1075
HDSGT033	ST118202LC	18GB	LVD 80 Pin	80Mbps	\$1625
HDSGT036	ST118202FC	18GB	Fibre Channel	100Mbps	\$1625

LVD:

Low Voltage Differential Drives are for use with Ultra 2 SCSI Controllers such as the Adaptec 2940U2W Controller giving you a transfer rate of 80Mbps. Backwards compatible with Ultra & Ultra Wide SCSI Controllers.



TravelStar 2.5" IDE Drives

Experience blistering performance on a notebook computer. This IBM range of TravelStar IDE drives feature 512K of cache accessed via an Ultra ATA interface. Compatible with most notebook & laptop computers.

Code	Capacity	Seek Time	Tr/Rate	Price
HDIBM001	3.2GB	13ms	33Mb/s	\$310
HDIBM005	4.8GB	12ms	33Mb/s	\$345
HDIBM007	6.4GB	12ms	33Mb/s	\$460
HDIBM031	8.1GB	12ms	33Mb/s	\$499

LAPTOP DRIVES

Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME

Please read our Terms and Conditions



Adelung Computers



Stealth III S540



PCI NOW AVAILABLE

With Diamond's Stealth III S540 Xtreme, Xtreme gaming has arrived! Stealth III S540 Xtreme delivers robust 2D/3D features and speedy performance at an unbelievable price.

Based on the S3 Savage4 Xtreme chipset and featuring S3TC texture compression, integrated advanced 3D quality features include 128-bit processing, 32MB of memory, up to AGP 4X support, a 32-bit 3D rendering pipeline and massive texture processing, Stealth III S540

Xtreme delivers stunning visual quality at blazing speeds for the hottest 3D games. Stealth III S540 Xtreme is a complete solution, powering colorful 2D business applications with amazing speed and accelerating cinema-quality DVD movies.

32MB PCI
\$195
DCDA031

32MB AGP OEM
\$169
DCDA023

Xtreme
\$265
DCDA030

Viper V770

Break Havoc with the Ultimate 3D

The Viper V770 features 32MB memory & 128-bit power for fierce 3D and 2D graphics performance. Based on the NVIDIA RIVA TNT2 - with the latest 3D technology, AGP 4X support, and full optimization for Windows 95/98 and Windows NT 4.0. Viper V770 Ultra goes further to include a tweaked hardware design for the fastest gaming solution on earth.



32MB ULTRA 32MB 16MB OEM
\$365 \$289 \$215
DCDA026 DCDA027 DCDA028

Monster Sound MX300

Ultimate 3D Audio Experience!!!

Want to annihilate your opponents every time? Diamond's Monster Sound MX300 gives you awesome combat tools: Aureal's latest A3D 2.0 positional audio, 4-speaker support and 64-voice hardware wavetable synthesis. Imagine playing your favourite PC game hearing footsteps from behind you and gun shots from overhead.

- Hardware A3D 2.0 acceleration
- 9.6 audio systems
- Features Dolby Digital (AC-3) support
- Advanced 320-voice wavetable with support for downloadable samples
- Supports DOS and Windows games



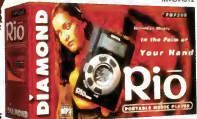
\$135
MMDA011

Rio PMP300

The first portable MP3 music player that stores up to 60 minutes of digital quality sound. Load the latest songs on to Rio directly from your Hard Drive, personal CD's or the Internet and carry them with you. It's smaller than an audio cassette and has no moving parts, so it never skips. Powered by a single AA battery, Rio provides up to 12 hours of continuous music playback.

- Lightweight - only 70 grams
- Palm size for easy portability
- 32MB built-in flash memory

\$299
MMDA012



16MB Flash Memory Card
\$129
MMDA014

Rio 500

Internet Music in the Palm of Your Hand!

The Rio 500 puts the power of digital audio in the palm of your hand! Rio 500 is skip-free, portable audio player that hold up to two hours of digital quality music and up to 32 hours of spoken audio content. Rio is the perfect companion for people on the go.

- 64MB built-in memory - Expandable to 96MB
- Back-lit LCD display with preset & custom EQ functions
- 13 hours continuous playback with single AA Battery



\$525
MMDA015



32MB Flash Memory Card
\$199
MMDA016

INTERNET WEB SITE:

http://www.adelong.com.au
e.mail: info@adelong.com.au

HEAD OFFICE & SERVICE

54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 8344 3168
Fax: (02) 9697 9777

CITY OFFICE

127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5042

The Millennium G400 Series



A powerhouse of breakthrough technologies and next-generation features, the Millennium G400 Series of graphics boards are outfitted with Matrox's unique DualHead Display feature, built-in support for true Microsoft® DirectX™ 6 Environment-Mapped Bump Mapping and trademark Vibrant Color Quality² rendering. It is these unequaled, must-have features which not only distinguish them from all other graphics solutions, but which revolutionizes the way you use computers.

The Millennium G400

Fitted with 16 or 32MB of fixed, high-speed SGRAM, the Millennium G400 provides lightning fast, ultra-crisp displays with its 300 MHz RAMDAC, while at the same time delivering stunningly realistic image quality in the most demanding business and home applications without compromising performance.

G400 RETAIL
16MB
\$329
DCMAT031

G400 RETAIL
32MB
\$415
DCMAT034

G400 16MB
OEM
\$295
DCMAT036

G400 32MB
OEM
\$395
DCMAT037

The Millennium G400 MAX

The Millennium G400 MAX is fitted with a fixed 32MB of high-bandwidth SGRAM and is supercharged with a 360 MHz UltraSharp RAMDAC capable of driving high-end monitors at resolutions of up to 2048 x 1536, 32-bpp at 85Hz. Targeted directly at the accept-no-compromise PC gamer and at professionals who require an exceptionally large desktop display, the Millennium G400 MAX slams the performance gain into overdrive with an increase in raw speed of more than 30 per cent over the Millennium G400.

G400 MAX 32MB AGP \$485 DCMAT035

Sound Cards



Montego II

QUADZILLA

The total 3D gaming experience!

The gamer's choice for the best in 3D audio just got better. Introducing the new Montego II Quadzilla from Turtle Beach. Armed with the very latest Wavetracing™ technology, Quadzilla submerses you in the astounding 3D audio world of the hottest new games and websites with realistic three-dimensional audio images. And with stereo S/PDIF digital output, you get the best theater quality surround sound for your PC.

- A3D 2.0 positional audio with four speaker support and S/PDIF digital output
- High-quality audio performance with 97 dB signal-to-noise ratio
- 320 voice PCI wavetable synthesis
- Includes Voyetra Software Suite

Montego II

With advanced features such as high-speed bus-mastering scatter-gather PCI audio interface, DirectSound acceleration, 320 voice wavetable synthesis, A3D positional audio for realistic gaming effects, hardware-based, full-duplex record/playback at full bandwidth and 96 DMA channels, Montego II maximizes your multimedia experience by delivering state-of-the-art audio performance! Montego II also runs legacy DOS games,* so you can supercharge Windows audio without giving up DOS games compatibility

- High-resolution, 18-bit converters
- 10 Band Hardware Equalizer
- Greater than 97 dB signal to noise ratio
- Supports all of the latest PC audio standards
- Experience the thrill of Aureal A3D
- Internet-ready with enhanced stereo full-duplex audio



A3D Quadraphonic



\$325
MMATU002



\$169
MMATU004

Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190
RESELLER ENQUIRIES WELCOME
*Please read our Terms and Conditions

Speakers

**ALTEC
LANSING**

ACS22 TOWER SPEAKER SYSTEM

Powerful sound from a two tower system

Ideal for those consumers who need excellent PC audio output, either for teleconferencing, games or music CDs, but who do not have a requirement for a subwoofer. Excellent value for money.

- Small footprint with headphone output
- 5 Watts RMS Power
- Produces powerful audio output from two satellites

\$65

HMAL008



ACS33 POWERCUBE SPEAKER

3-Piece system dramatically enhances PC Audio

The PowerCube Speaker system with its compact satellites delivers powerful audio playback from a 3-piece system. Active subwoofer can be set for desired bass response and the electronic controls on the satellites adjust the volume for both satellites and subwoofer simultaneously.

- 10 Watts Satellite Power
- Volume control and Power ON L.E.D
- 15 Watts Subwoofer Power

\$145

HMAL005



ACS45.1 POWERCUBE SPEAKER

Proven Sonic Performance at an amazing price.

Introducing the Altec Lansing ACS45.1 PowerCube Speakers, a three piece multimedia audio solution at an unbelievable price. Experience the enhanced output of the PowerCube satellite system. Great for games and CD's, the ACS45.1 will bring hi-fi audio to your computer desktop today.

- 12 Watts Satellite Power
- 3" full range driver
- 20 Watts RMS
- 6" subwoofer

\$175

HMAL001



ADA305 DIGITAL POWERCUBE

Digital Pro Logic Ready

The ADA305 Digital PowerCube delivers multidimensional audio excitement resulting from a Dolby Pro Logic decoder in the subwoofer. To deliver multichannel audio, the Digital PowerCube uses Altec Lansing's patented side-firing speakers to deliver true multidimensional audio.

- 20 Watts Satellite Power
- 2 x 3" full range drivers
- 6" Subwoofer
- USB ready
- Sub 20Watts RMS

\$365

HMAL006



ACS54 POWERPLAY PLUS SPEAKER

5-piece system designed especially for the sound demands of gamers. PowerPlay Plus is the only speaker system designed especially for gamers that provide high quality, powerful surround sound game audio output. This 5-piece system provide a true multidimensional surround sound experience

- 20 Watts Satellite Power
- 20 Watts Subwoofer Power
- Unique Bracket/stands provide convenient mounting possibilities for surround speaker

\$225

HMAL009

HOT



ADA880 DOLBY DIGITAL

The ADA880 combines 80 watts pure power, sophisticated electronic circuitry, and Altec Lansing's patented speaker technology to bring crisp, thunderous Dolby Digital audio to your desktop. The ADA880 also features detachable rear surround speakers to create the ultimate surround sound environment available today.

- Automatically detects the signal source and output to either Dolby Digital, Dolby ProLogic, or Stereo
- Satellites can be placed near without disturbing images.
- Control of all audio functions at your fingertips

\$599

HMAL010



Graphics Cards

- 32 bit internal rendering
- full 128-bit 2D accelerator

- DVD hardware assist
- DirectX®, Glide® and OpenGL®

**Built in
TV Output**

3dfx



AGP OEM

\$225

DC3DF004

AGP

\$299

DC3DF000

PCI

\$299

DC3DF001

Industry-Leading Performance

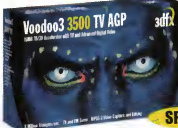
The 143MHz Voodoo3 2000 AGP and PCI boards are expected to generate up to 6 million triangles and 286 Megatexels per second at resolutions of up to 2,048 by 1,536 pixels. The Voodoo3 2000 boards will feature a 300MHz RAMDAC and 16 MB of SDRAM.



The 166MHz Voodoo3 3000 AGP board is expected to generate 7 million triangles and 333 Megatexels per second at resolutions of up to 2,048 by 1,536 pixels. Features a 350MHz RAMDAC, TVS-Video Out capabilities as well as a game bundle featuring best-selling titles. The Voodoo3 3000 will also feature 16 MB of SDRAM.

\$399

DC3DF002



The 183MHz Voodoo3 3500 AGP board is expected to deliver up to 8 million triangles and 366 Megatexels per second at resolutions of up to 2,048 by 1,536 pixels. It also includes 3dfx's proprietary flat-panel support, LCDs. Features Real-time MPEG-2 Video and Intelligent TV - Tuner and Digital VCR VisualReality™. Also features a 350MHz RAMDAC, TVS-Video Out capabilities also a game bundle featuring best-selling titles with 16MB of SGRAM.

\$599

DC3DF003

SPECIAL

INTERNET WEB SITE:
<http://www.adelong.com.au>
e.mail: info@adelong.com.au

HEAD OFFICE & SERVICE
54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 8344 3188
Fax: (02) 9697 9777

CITY OFFICE
127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5042

Adelong Computers

Magic TNT2

The Magic TNT2 using the nVIDIA RIVA TNT2 chipset is the fastest and meanest gaming card on the market today. Featuring a 300MHz RAMDAC, the Magic TNT2 supports resolutions up to 2048 x 1536 with ease. Loaded with 32Mb of ultra quick SGRAM the Magic TNT2 offers complete support of 3D textures and is optimized for Pentium III and AMD 3DNow systems.



32Mb AGP
\$265
DCMAG017



Magic TNT2 M64

The Magic M64 utilising the nVIDIA TNT2 128-bit chipset features award winning performance at a competitive price. Featuring 32Mb of SDRAM and a 300MHz RAMDAC for crystal clear resolution, the M64 is ideal for graphics, hardcore gaming and watching DVD action in full screen mode.



\$195
DCMAG020

Magic 3D Banshee

The Magic TwinPower incorporating the latest 3DFX Voodoo Banshee chipset is one of the fastest and most amazingly fast 2D/3D Graphics Accelerator on the market today. Play games at up to 60 fps and run high resolution games/ applications at up to 1600 x 1200 with hardware acceleration.



- 128-bit combined 2D/3D Voodoo Banshee chipset
 - 16MB Memory with 125MHz SGRAM
 - Supports Glide, OpenGL, DirectX, Direct3D
 - NT 4.0 & Windows 95/98 compatible
- PCI AGP
\$159 \$159
DCMAG001 DCMAG002

Magic TV

Watch full screen TV on your PC with the FlyVideo TV Card. Capture live video & images from your VCR or Camcorder, or use a CCD Camera and video-conference over a LAN or Internet. Teletext included with FM radio.



TV Card/Remote/FM Radio
\$135
MNMAG002

Magic Toplan

TopPlan is a USB to USB Host connector allowing two or more computers to share programs, files and peripherals such as printers with ease. Multiple network nodes supported to a super-fast 12Mbps under Network Neighborhood in Windows 98. Simple PnP installation ideal for multi-player gamers & those with more than one computer. Pack includes a TopPlan Host and 2 x 5m USB cables.



\$125
NWMAG000

Magic Link



Simple, portable and fast link for transferring files between two USB-enabled computers. A must for notebook & mobile users. Software & 6ft cable included.

\$55
NWMAG001

Magic Theater Pro

Magic Theater Pro 5.1 Channel system will deliver Hi-Fi and true Dolby Digital AC-3 sound on your PC with today's games and movie titles. Comes complete with a Magic Sound Live! PCI soundcard and a speaker system consisting of a subwoofer, 4 satellites and a center channel delivering a total of 47 Watts RMS.



\$379
MNMAG003



Magic TrueSound

Magic TrueSound brings together requirements demanded by musicians, gamers and mid players. Allowing them to enjoy the high quality environmental sound. Featuring the JRC TrueSurrounds 3D audio processor. It produces exceptional sound experience from multi-channel audio such as Dolby Digital through only two speakers.



\$65
MNMAG004

Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190
RESSELLER ENQUIRIES WELCOME
Please read our Terms and Conditions



4Mb S3
AGP Card
\$45
NWMAG005

8Mb S3
AGP Card
\$65
NWMAG006

Adelong Computers

DFE-905 Network Kit

Includes everything you need to set up a network. Includes 2 PCI 10/100 Ethernet cards, 4 Port Dual Speed Hub and 2 x 6 meter Cat5 network cables. Ready made for Small and Home offices.

**\$295**

NWOL033

Ethernet and Fast Ethernet Adapters

Code	Model	Bus	Speed	Price
NWOL000	DE-220PCT	ISA	10Mbps	\$35
NWOL001	DE-528CT	PCI	10Mbps	\$39
NWOL002	DE-530TX	PCI	10/100Mbps	\$55
NWOL026	DE-500TX	PCI	10/100Mbps	\$85
NWOL040	DFE-570TX	PCI	4 x 10/100Mbps	\$595

DP-802 Internet and Print Server

This device allows the entire workgroup to access the Internet through 1 ISP account, and then print any documents to a shared network printer. Features 1 Parallel port, 1 x 10/100Mbps LAN port and 56K modem/128Kbps ISDN TA support.

**\$580**

NWOL034



Internet Servers

Code	Model	Ports	Network Port	Price
NWOL024	DP-602	2x Serial Port	10/100Mbps	\$485
NWOL046	DP-601M	1 x 56K V.90 Modem Port	10/100Mbps	\$525
NWOL047	DP-692	2 x Serial Port + Uplink	9 X 10Mbps	\$565
NWOL015	DP-300	2x Parallel, 1 x Serial	10/100Mbps	\$435

Print Server Switches

Code	Model	Ports	10Mbps	100Mbps	Price
NWOL021	DES-815	15	12	3	\$875
NWOL022	DES-1008	8	✓	✓	\$610
WDL032	DES-1016	16	✓	✓	\$1215
WDL035	DES-1024	24	✓	✓	\$1745

INTERNET WEB SITE:
<http://www.adelong.com.au>
 e-mail: info@adelong.com.au

DFE-660TX 10/100Mbps PCMCIA Card

The DFE-660TX adapter is engineered to unleash power of today's notebooks and turn them into robust stations or servers. Features the advanced 32-bit Cardbus interface, explosive 10/100Mbps Full/Half Duplex performance and RJ-45 connection.

D-Link
 DMF-560TX 10/100 Ethernet LAN + 56K Fax
 Modem Multifunction PC Card



PORTABLE ADAPTER

PC
 MAGAZINE
 EDITORS
 CHOICE

\$165

NWOL043

PCMCIA Fax/Ethernet Cards and Fax/Modems

Code	Model	Description	Price
NWOL003	DE-660CT	10Mbps PCMCIA Ethernet Card	\$105
NWOL044	DMF-560TXD	10/100Mbps + 56K V.90 PCMCIA Card	\$395
FMOL003	DM-560	56K V.90 & Flex PCMCIA Card/Modem	\$165
FMOL001	DFM-560E	56K V.90 & Flex External Fax/Modem	\$129
FMOL000	DFM-560I	56K V.90 & Internal Fax/Modem	\$85

DU-H4 4 Port USB Hub

These USB Hubs allow you to connect up to 4 USB peripherals for use with a single PC.

**\$75** NWOL037

DU-H3SP 3 Port USB with 1 x Serial, 1 x Parallel

Multipurpose device allows connection of up to 3 USB peripherals, 1 serial device and 1 parallel port device such as a printers and modems.

**\$169** NWOL038

Hubs

Code	Model	Ports (RJ45)	Speed	Price
NWOL017	DE-805TP	5	10Mbps	\$89
NWOL004	DE-809TC	8	10Mbps	\$105
NWOL042	DE-816TP	16	10Mbps	\$279
NWOL030	DE-824TP	24	10Mbps	\$459

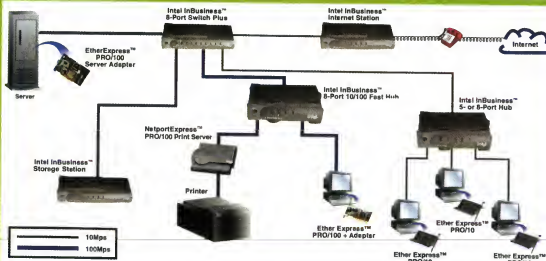
Dual Speed Hubs

Code	Model	Ports (RJ45)	Speed	Price
NWOL045	DFE-905DX	5	10/100Mbps	\$240
NWOL012	DFE-908DX	8	10/100Mbps	\$355
NWOL014	DFE-916DX	16	10/100Mbps	\$855
NWOL020	DFE-2624X	24	10/100Mbps	\$1325

HEAD OFFICE & SERVICE
 54 Rosebery Avenue
 Sydney NSW 2018
 Ph: (02) 8344 3188
 Fax: (02) 9697 9777

CITY OFFICE
 127 York Street
 Sydney NSW 2000
 Ph: (02) 9267 5272
 Fax: (02) 9267 5042

intel® InBusiness™ Small Business Networking Products



Ethernet PCI Adapters

For customers who want basic, high speed connectivity, the Intel® PRO100+ provides peak performance and Adaptive Technology to optimise network performance. 10/100M auto-negotiation automatically connects at the highest speed for maximum performance.



Server Adaptor
\$189

NWINT016

Management Adaptor
\$149

NWINT015

InBusiness™ Hubs

Intel® InBusiness™ Hubs are designed so you can easily create your own small network or expand an existing network in minutes. Designed to be small enough for the desktop, they are the perfect solution for sharing devices and other resources.

- Simply Plug & Play Installation
- Crossover port allows you to connect to other Hubs
- Choice to 10 or 100Mbps RJ-45 Ethernet Connectivity



Code	Model	Speed	Price
NWINT008	5-port	10Mbps	\$99
NWINT009	8-port	10Mbps	\$119
NWINT010	4-port	100Mbps	\$199
NWINT011	8-port	100Mbps	\$365
NWINT012	8-port	10/100 Auto	\$425

InBusiness™ Internet Station 56K

The Intel® InBusiness™ Internet Station 56K is the ideal way to connect your small office to the Internet. Cost-effectively share one analog phone line, and one Internet account over the network. Easily combine multiple analog connections and line to increase your Internet access speed up to two times current analog speed. The Intel InBusiness Station 56K is part of a complete line of networking products designed specifically for small business.

- 2 x RJ-11 Phone Ports, 9-Pin Serial Port
- 4 x 10Base-T Ethernet Ports
- Supports TCP/IP, DNS, DHCP, CHAP, HTTP
- Built in 56K Modem
- Includes browser based setup software



\$595

NWINT018

InBusiness™ Switch

The Intel® InBusiness™ 8-Port 10/100 Switch is perfect for improving the performance of your network using standard or Fast Ethernet. Designed to give users high-speed performance at an affordable price.

- Plug & Play Installation
- Auto sensing ports automatically detect speed of connected device.
- Switching provides each user or hub a direct channel to network devices



\$575

NWINT014

InBusiness™ Print Station

The Intel® InBusiness™ Print Station is the easy way to share printers over a network. Set-up is so simple that within minutes your small business can be printing to shared printers over a 10 or 100Mbps network. Now you can locate up to 2 printers anywhere on your network independent of PCs with a single Print Station.

- 10 or 100Mbps Ethernet Connection
- Supports 2 Parallel Printers
- No configuration hassles with simple installation wizard



\$315

NWINT007

InBusiness™ Storage Station

The InBusiness™ Storage Station lets your office share files over the network, and includes PC backup software for data protection. Simple installation and setup make it the easiest way to provide shared storage for your employees by simply dragging and dropping files on a central drive.

- 10 or 100Mbps Ethernet Connectors
- Supports TCP, DHCP, FTP, HTTP, SMB
- Includes Client installer CD software



12GB
\$1815

NWINT004

24GB
\$2645

NWINT005

Microsoft IntelliMouse Explorer



Point and click with pinpoint accuracy-literally! The new IntelliMouse Explorer from Microsoft is so advanced, it doesn't need a mechanical ball as its been replaced with the new IntelliEye optical sensor, which provides consistent accuracy and control on virtually any surface.

- Features 2 additional, customizable buttons
- Includes the IntelliMouse scrolling wheel

\$95 ICMST012

Microsoft Natural Keyboard Pro



The new ergonomic Microsoft® Natural® Keyboard Pro features 19 "Hot Keys," which link directly to applications on your PC and the web. Plug in up to 2 USB devices directly into your keyboard.

\$109 ICMST014

Microsoft SideWinder Dual Strike

Dual Strike integrates the directional control of a keyboard, the precision of a mouse, the fun and excitement of a joystick, and the comfort of a game pad-all in one single and versatile handheld unit. Dual Strike device controls functions like running, dodging, side-stepping as well as aiming, navigation, and coordinating difficult moves like strafing and circle strafing. USB Port required

\$89 ICMST016

Microsoft IntelliMouse IntelliEye



The IntelliMouse with IntelliEye gives you superior precision with its revolutionary optical sensor that scans your desktop 1,500 times a second. It works on virtually any surface-so no mouse pad or roller-ball cleaning is required. The IntelliMouse with IntelliEye also features an ergonomic design and a wheel for efficient zooming and scrolling.

\$75 ICMST013

Microsoft Internet Keyboard



Includes 10 hot keys on a comfortable design that also features a detachable palmrest for added comfort. Hot Keys allow instant access to email and internet functions.

\$55 ICMST015

Microsoft Precision Racing Wheel

The Precision Racing Wheel includes a compact, yet rugged, state-of-the-art PC steering wheel, an easy-to-release clamp, and sturdy, non-slip pedals. The Precision Racing Wheel also features 8 buttons, including 2 shifters/triggers, which you can program and customize for your own driving preference

\$149 ICMST017

Camera/Speakers

QuickCam™ Express

Make face to face online meetings a reality over the Internet. Snap and send photos and video-emails with the ease.

- 24 bit colour
- 352 x 288 resolution at 16fps

\$95 ICMST022



SoundMan® G1

These speakers handle sound across the full sound spectrum to add high-quality, realistic audio to your multi-media computer, portable CD player, or TV. Just plug the speakers in and start listening. Full volume and bass controls and headphone jack.

- 8 Watts RMS Power
- Frequency: 55Hz - 18Khz

\$69 MMLG000



SoundMan® X1

From soaring high notes to deep bass, you'll experience the full, complex richness of your favorite music and crisp, clear sound whether you're down-loading from the Internet, getting into MP3 audio, or listening to your favorite CD.

- 25 Watts RMS Power
- Frequency: 38Hz - 20Khz

\$125 MMLG001



SoundMan® X2

Experience theater-quality audio that captures crisp, clear highs & deep, rich bass. Enjoy the full, high-definition sound spectrum and add ultra-realistic, high fidelity sound to any multimedia computer

- 40 Watts RMS Power
- Frequency: 30Hz - 20Khz

\$175 MMLG002



INTERNET WEB SITE:
<http://www.adelong.com.au>
 e.mail: info@adelong.com.au

HEAD OFFICE & SERVICE
 54 Rosebery Avenue
 Rosebery NSW 2018
 Ph: (02) 8344 3188
 Fax: (02) 9697 9777

CITY OFFICE
 127 York Street
 Sydney NSW 2000
 Ph: (02) 9267 5272
 Fax: (02) 9267 5042

Let Swann cater to all your modem needs.

Whether you use it for gaming, email, working or online transactions we have the modem just for you



net SLIDER 56K V.90

The faster your modem, the faster your commands are received and processed by an on-line server, putting you ahead of your on-line competition. The Swann Netslider's ISO 9901 Rockwell chipset guarantees to deliver exceptionally stable as well as fast data transmission. Finally a modem that is catered just for gamers.



\$179 FMSW005

Swann Smart 56K



Simplicity and stability are what made this modem win a 'best buy' award among 17 leading-brand modems tested. The Swann Smart 56K External Modem's elegant upright design, not only takes up less desk space, but defies heat, the enemy of all modems. Perfect for the family and new computer user and those new to the Internet.

BONUS OFFICE WEBWORKS

Internal **\$89** External **\$179**
FMSW001 FMSW002

Speed Demon 56K

Red hot and roaring to go! The Speed Demon 56K modem offers blinding speed and reliability. With dual chip v.90/x56 Flex technology, it's fax, data and voice compatible. Simple to install and easy to use, this modem will take you on the W...W...wildest ride.



\$129 FMSW004

Swann Smart 56K Global PC Card



Use in 27 Countries

Swann Smart International 56K modem cards let you travel virtually anywhere in the world with your notebook or Palm personal assistant and never lose touch. In fact all your usual business and personal communication tasks need never be curtailed, just because you're overseas.

\$169 FMSW1002

U.S. Robotics

3Com 56K Faxmodem



56K Fax modem gives users faster downloads for a more exciting, rewarding online experience. U.S. Robotics were the first V.90-compliant modem brand available. So U.S. Robotics modem users can get all the Internet they want from any service provider offering either V.90 or x2 technology. These modems are software upgradeable so with just a few clicks brings new features.

\$179 FMR0014

3Com 56K Message Modem Pro

All the features of a top brand Voice/Fax Modem and more. This unit allows superfast internet access with either V90 or X2 systems. Experience office quality full duplex hands free speakerphone with this modem, even feature Caller ID too. You can even store voice/fax messages when your PC is switched off.



\$275 FMR0012

NetComm

Netcomm Roadster II Ultra 56K

This modem features Simultaneous Voice Data, which means you can send data and voice through the one line. Great for gamers as well as the business user, this modem features V90 as well as K56 flex protocols. Connect in either the new advanced USB interface or the traditional serial interface.



USB **\$235** FMR0015
Serial **\$235** FMR0012

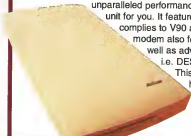
Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3150



Netcomm Smartmodem 56K

This is the top of the range modem from Netcomm. If you require unparalleled performance from your modem, this is the unit for you. It features the Rockwell chipset, complies to V90 and K56 flex standards. This modem also features 16bit technology as well as advanced encryption technology i.e. DES encryption and SuperSecure. This advanced business modem has no competitors.



\$515 FMR0018

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME
Please read our Terms and Conditions

AdeLong Computers

Modems/Multimedia

Dynalink 56k External Modem

- V.90 / K56flex dual-mode for high Internet compatibility
- Plug 'n play, plus friendly QuickGuide for easy installation.
- Send and Receive faxes with high speed and clarity from your PC.
- FaxStream DUET, Caller ID, Voice Mail, Handsfree Speakerphone Mode.
- Free-call Tech Support

VoiceDesk56

Pro External

\$145

FMDYN001

"Good value for money... ease of setup and use is excellent... consistently connects at high speeds"
Australian PC World, Nov 1999.

5 YEAR WARRANTY



With all Dynalink modems:

6 MONTHS FREE INTERNET ACCESS With TPG

PLUS: ValuePack software offer: iPhone 5 FREE, Norton Utilities 3 \$20, Compton's Infopedia \$15, Quake II \$10 with your purchase of any Dynalink product.

SIX MONTHS OF FREE INTERNET HOURS WITH TPG IS AVAILABLE IN SYDNEY, PERTH, MARRIBONG, COLLINGWOOD, LAKE MACQUARIE, MELBOURNE, BROSBANE, SOUTHPORT, CANNESIA, ADELAIDE, PERTH, HOBART, LAUNCESTON AND DARWIN. ONE OFF \$500 CONNECTION FEE. TERMS AND CONDITIONS APPLY. UNLIMITED 3 HOUR CONNECTIONS OFFER AVAILABLE FOR A LIMITED TIME.

Dynalink

Dynalink Internal ISA or PCI

ISA has all the features of our external.

PCI:

- Plug 'n play installation
- Telephone Answering Machine Mode
- V.90 / K56flex dual-mode for high Internet compatibility
- Send and Receive faxes with high speed and clarity from your PC.
- Free-call Tech Support
- 1 Year warranty on PCI

VoiceCard56 ISA

\$129

FMDYN000

PCI Card56

\$85

FMDYN005



Dynalink PCMCIA (PC Card) Modem

PCMCIA PC-CARD MODEM

- Plug 'n play installation
- V.90 / K56flex dual-mode for high Internet compatibility
- Send and Receive faxes with high speed and clarity from your PC.
- Free-call Tech Support

5 YEAR WARRANTY



\$179

FMDYN003

Dynalink Magic TVView

TVIEW TV/FM TUNER VIDEO CAPTURE CARD

- Fully Featured, including Teletext and Remote Control & Optional FM Tuner

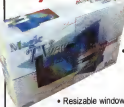
- Resizable window, right up to full-screen (840x480), using the Remote Control.

- Capture incoming video from a VCR, digital camera or CamCorder, then edit the captured digital data.

ALSO AVAILABLE: USB DEVICES AND 3D GRAPHIC ACCELERATORS

\$129

MMDYN001



For more information on any of Dynalink's products, please visit www.dynalink.com.au or FreeCall 1800-357-653

Monitors

FLATRON 17" 795FT plus



USB

Triple Free

- Eye Strain Free
- Distortion Free
- Tension Wire Free

Built in 4 port USB Hub

Type:	17" (16.01" viewable)
Dot Pitch:	0.24mm Stripe Pitch
Max Resolution:	1600 x 1200/ 75Hz
V-Frequency:	50-160Hz
Communication:	DDC1 / 2 with OSD
Certifications:	MPR-II, TCO-99, EPA, CE

Unlike conventional flat CRTs, LG Flatron is completely 100% Flat, showing you images with enhanced color purity. Superior high resolution and innovative W-ARAS coating means less eye-fatigue due to reduced emissions and reflections.

\$885 M0LGS000

INTERNET WEB SITE!

<http://www.adelong.com.au>
e.mail: info@adelong.com.au



Studioworks 15.1" LCD 500LC

Think Flat



Flat does working good. Slim does looking cool.

Type:	15.1" TFT
Pixel Pitch:	0.3mm
Max Resolution:	1024 x 768/ 75Hz
V-Frequency:	50-160Hz
Communication:	DDC2 with OSD
Certifications:	MPR-II, TCO-99, EPA, CE

If you think you can never be too rich or too thin, then the 500LC from LG is for you. With its rich, brilliant display and slim, elegant contours this TFT-LCD has a wide viewing angle, and multi-synchronous support up to 1024 X 768 @ 75Hz. What's more, all supported resolutions are shown at full screen size, automatically. The 500LC from LG. Enjoy the view.

\$2225 M0LGS001

NEAR OFFICE & SERVICE

54 Roseberry Avenue
Roseberry NSW 2018
Ph: (02) 9344 3188
Fax: (02) 9697 9777

CITY OFFICE

127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5042

Adelong Computers

20

AUSTRALIA WIDE 3 YEAR ON SITE WARRANTY*

NEW RANGE OF MITSUBISHI MONITORS

Mitsubishi Diamond View 1554i 15"

- 15" Monitor ideal for home users
- Dynamic Focus picture tube
- 13.9" Viewable, 0.28 dot pitch
- Max Resolution 1024 x 768 @65Hz
- Weighs 13kg



\$295 MCM1009

Mitsubishi Diamond View 1570 15"

- 15" Monitor ideal for SOHOs
- Dynamic Focus picture tube
- 13.9" Viewable, 0.28mm dot pitch
- Max Resolution 1280 x 1024 @60Hz
- Weighs 13kg with OSD



\$345 MCM1010

Mitsubishi Diamond View 1770e 17"

- 17" Monitor for casual users
- High Contrast CRT
- 15.9" Viewable, 0.27mm dot pitch
- Max Resolution 1280 x 1024 @60Hz
- Weighs 18kg with OSD



\$495 MCM1012

Mitsubishi Diamond View 1795DT 17"

- 17" Monitor for demanding users
- Flat, Diamandtron Tube
- Aperture Grille
- 16" Viewable, 0.25mm dot pitch
- Max Resolution 1600x1200 @ 75Hz
- Weights 23kg with OSD



\$775 MCM1013

Mitsubishi Diamond View 1995 19"

- 19" Monitor for professionals
- 18" Viewable, 0.26mm dot pitch
- Max Resolution 1600 x 1200 @75Hz
- Weights 24kg with OSD
- BNC & 15Pin Input



PRICE DROP

\$1149 MCM1005

Mitsubishi Diamond View 2107 21"

- 21" Monitor for professionals
- 20" Viewable, 0.26mm dot pitch
- Max Resolution 1600 x 1200 @85Hz
- Weights 30kg with OSD
- BNC & 15Pin Input



VALUE

\$1925 MCM1006

'Compared to the Sony Trinitron, the Diamond View scored equal to, or better than in every regard, apart from brightness'

APC MAGAZINE APRIL 1999



'the only 19" to equal & better Sony in our tests'

APC MAGAZINE APRIL 1999



* Terms & Conditions Apply

MITSUBISHI CD-ROM DRIVES



Code
MMMT001
MMMT005

Model
40x EIDE CD-ROM
50X EIDE CD-ROM

Price
\$79
\$99

DIAMOND DATA CD-ROM drives are Multi Read Compliant, support Ultra DMA data transfers and employ advanced Constant Angular/Linear Velocity for improved reads and transfers.

MITSUBISHI DRIVES

Mitsubishi offers the latest innovation in floppy disk drive technology, the LS-120, with 120 megabyte capacity. The LS-120 is also compatible with older 1.44 MB disc.



Code
BUMT000
BUMT001

Model
Mitsubishi LS -120
120MB capacity diskettes

Price
\$149
\$25

3.5" 1.44MB
Floppy Drive **\$25**
F5MT003

Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME
*Please read our Terms and Conditions

Adelong Computers

Model	15"DD-5568A	17"DC-7708A	17"DE-770FA	19" DA-995
Screen Size	13.8" Viewable	16" Viewable	16" Viewable	18" Viewable
Dot Pitch	0.28mm	0.27mm	0.25mm	0.25mm
Max Resolution	1024x768 N/I	1280 x 1024 N/I	1280 x 1024 N/I	1600 x 1200 N/I
User Control	OSD	OSD	OSD	OSD
Price	\$275 MOVID003	\$425 MOVID000	\$485 MOVID002	\$875 MOVID001
3 YEAR ON SITE WARRANTY*				
*QUEENSLAND, NSW, VICTORIA ONLY				
CE				

Monitors/CD-R

PanaSync S110

Combining value with high quality imaging, the PanaSync S110 is an excellent buy for a 21" monitor. It has all the features expected in a high end monitor all at a very reasonable price. If you are looking for good value uncompromised monitor performance then the PanaSync S110 is perfect for you.



21" CRT, 20" viewable
0.25mm dot pitch
1600x1280 @ 71Hz



\$1795
MCPAN001

PanaSync SL

The PanaSync SL range of monitors feature the unique Short Length Technology. This technology give a PanaSync SL 17" monitor the depth of a normal 14" monitor and the 19" PanaSync SL the depth of a 15". The shorter depth of the ZenTan™ CRT reduces the distance between electron beam gun and the screen's phosphor surface thus enhancing picture quality.



PanaSync SL75

17" CRT, 16" viewable
0.27mm dot pitch
1280x1024 @ 66Hz

\$715
MCPAN015

PanaSync SL90i

19" CRT, 18" viewable
0.25mm dot pitch
1600x1200 @ 75Hz

\$1245
MCPAN011

Panasonic CD-Recording Kit

Want no frills high speed SCSI recording performance then look further than this bundle. It includes the new 8x record, 20x read internal SCSI drive, a PCI SCSI card and recording software. Panasonic reliability and 8x recording performance but only at a 4x price.

\$625
MMPAN007

Drive only
\$519
MMPAN008



CD-ROM/CD-RW Drives

Delta 44x CD-ROM Drive



One of the fastest and most reliable CD-ROM drives on the market. This new range of IDE CD drives from Delta represent the best value for money. Supports reading of CD-R, CD-RW and other media.

\$75
MDEL000

Delta CD-RW Drive 4x4x20

Looking for the latest CD ReWriting technology at a great price then look no further than the Delta 4x record, 4x rewrite and 20x read IDE CDRW drive. This is the best value kit on the market with all software and hardware needed to start recording straight away. One blank CDR and CDRW included with kit.



\$395
MDEL001

INTERNET WEB SITE!

<http://www.adelong.com.au>
e-mail: info@adelong.com.au

HEAD OFFICE & SERVICE

54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 8344 3188
Fax: (02) 8344 3172

CITY OFFICE

127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5272

Verbatim.

CD-RW/CD-R

Signature II CD Colour Printer

The Signature II CD Colour Printer from Verbatim and Primera makes CD-R labelling easy. With Signature II's high-resolution printing, you can add crisp, colourful text, logos, graphics and photos to your CD-Rs. dpi resolution.



\$1745 MMVER006



Smart and Friendly

CD Racer

Double Speed
CD-Recorder
with CD-RW
ReWritability

CD Racer Internal is a 2x writer, 2x rewrite, 24x playback CD-Recorder. Includes free software worth \$699, the Racer is a low cost CD recorder solution that brings you new levels of performance and technology.



\$395 MMVER003

Prelude! 1-2-1

CD Duplicator

Discover just how easy it is to make your own CDs with the touch of a button!

Verbatim Prelude! 121 Duplicating System is the perfect way to duplicate and distribute CDs. Place an original CD in the 32x CD reader drive, followed by a recordable CD in the 4x CD recorder drive after the system has read the contents. Press the button and presto! You've got a true copy without having to turn on your computer in less than 20 minutes!



\$2375 MMVER005

CD-R Disks

Pack of 10 **\$29** MMVER000



CD-RW

\$15 MMVER004

DVD-ROM Upgrade Kit

DVD entertainment is now affordable with the Hitachi dual speed DVD-ROM Drive and Cinemaster MPEG Decoder Card, bringing the movies to your PC screen. Includes several DVD titles - Muppet Treasure Island, Spycraft, Daedalus Encounter, Wing Commander IV



\$295 MMVER111

HOT!

20x PCMCIA CD-ROM Drives

Connect a 20X CD-ROM Drive to your notebook PC today via the PCMCIA port. The slim-line tray design reduces the size of the unit making it portable and lightweight.



\$285 MMVER008

DVD-RAM Kit

Have up to 5.2GB of rewritable storage capacity at your fingertips with the latest in DVD-RAM technology. Features 1 x DVD-RAM Write and Erase, 2 x DVD-ROM/RAM playback and 8 x CDROM playback speeds in a SCSI Internal model. In addition is a bundled MPEG-2 Cinemaster DVD playback card.



\$1725 MMVER101

Code	Model	Price
MMVER012	2.6GB Disk	\$75
MMVER013	5.2GB Disk	\$109

CD Pocket RW 4420

The Smart and Friendly CD Pocket RW from Verbatim is a truly portable 4X Write, 4X ReWrite and 20X Playback CD Recorder with a 2MB Buffer. Weighing just 500 grams, the CD Pocket RW is designed specifically for portability.

Rechargeable battery pack is designed to write up to 6 CD's at 4X Speed without recharging. Comes with software and a PCMCIA host adaptor.



\$1325 MMVER009

Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME

*Please read our Terms and Conditions

Adelong Computers

Zip 250 USB

All the benefits of the Zip 250 plus all the advanced features of the USB technology. True hot plugging technology and super fast USB connection. The new drive is compatible with both Windows and Macintosh, it also features a compact ultra thin case.



NEW

\$345
BU10M040

Zip 250

zip 250

SuperFloppy Preferred by Millions

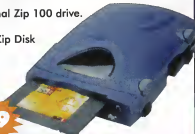
The new drive comes in two flavors: parallel port (for PC's) and SCSI (for Mac's or PC's with a SCSI connection). Zip 250 SCSI drive users will benefit from a performance boost, up to 56 times faster than standard floppy drives and 1.4 times faster than external CD-ROM drives. Best of all, current Zip 100 drive users need not worry about their investment in 100MB Zip using 250MB media).

- 50% faster than the original Zip 100 drive.

- Large 250Mb Capacity

- Compatible with 100Mb Zip Disk

- Proven Reliability



\$299
BU10M033

\$299
BU10M032

Clik! PC Card

clik! 40

This new Clik!™ drive is the size of a PC Card. Just slide it into your PCMCIA slot and have the benefits of super fast

40Mb storage that the Clik! technology provides. Perfect for your digital pictures or large multimedia files.



\$380
BU10M041

NEW

Clik!

clik! 40

Clik!™ drive can store 40Mb of data on a Clik! Disk. The Clik! Drive not only reads your Clik! Disk but also your Compact Flash and Smartmedia cards. The Mobile Clik! Drive connects to your printer port using a pass through technology and can run on rechargeable batteries for mobile applications. There is even a Type II PC Card that will connect your Clik! Drive up to your notebook. (Clik! Drive Plus)



BU10M035
BU10M036

Clik! Drive Ext.
Clik! Drive Plus

\$455
\$535

Zip Drives

Increase your storage quickly, easily and economically - as you need it. With a 100MB Zip Drive you can take your data anywhere at anytime. Each disk stores 100MB of data and you can add them, as your needs grow. Available in Parallel, SCSI, Internal IDE and the new USB interface. You also get Zip tools on CD.

IDE/ATAPI
\$135
BU10M007



\$199
Parallel

Drives

BU10M000 100MB EXT PARALLEL Zip Drive
BU10M026 100MB USB Zip Drive

\$190
\$240

Jaz 2GB Drive

jaz 2GB

The new Jaz Drives hold a whopping 2GB of data per disk. Best of all these drives are fast and backwards compatible with the industry standard

1GB disk. Stream &

capture video, backup data and store images are just some of the applications that the Jaz Drive can be used for. SCSI Card needed.

INTERNAL
\$645
BU10M017

EXTERNAL
\$645
BU10M018



Iomega Buz

buz

All the hardware and software you need to be a video genius. Introducing the Iomega Buz-the easiest way to get multimedia from camcorders, DVD, CD-Roms, VCRs and laserdiscs into your PC! It's a video capture and editing board combined with an Ultra SCSI controller that lets you capture Multimedia (fullmotion) video, sounds, digital pictures, music! into a PC

\$349
BU10M023

APPLE MAC
\$525
BU10M027



Accessories for Zip

BU10M012 100MB PC ZIP Disk **\$24**
BU10M005 100MB PC ZIP Disk (3 Pack) **\$63**
BU10M006 100MB PC ZIP Disk (10 Pack) **\$190**
BU10M022 ZIP Card, PCMCIA to SCSI **\$185**



\$24
BU10M012

Accessories for Jaz

BU10M024 JAZ 2GB Disk **\$195**
BU10M025 JAZ 2GB Disk (3 Pack) **\$559**
BU10M031 JAZ PCMCIA to SCSI Converter **\$215**
BU10M012 JAZ Traveller, SCSI to Parallel **\$85**



\$179
BU10M020

HEAD OFFICE & SERVICE
54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 8344 3188
Fax: (02) 8344 3122

CITY OFFICE
127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5242

INTERNET WEB SITE:
<http://www.adelong.com.au>
e.mail: info@adelong.com.au

Storage Drives

ORB™

2.2GB

INTERNAL AND EXTERNAL

Size. Speed. For everyone.

Easy to install Unlimited Capacity
Infinitely Rewritable

EIDE Drive

\$399

BU-ORB000

Look at the power ORB delivers!

- 3.5 hours of audio
- 2+ hours of video
- 2,000+ colour photographs
- 22 100MB floppy disks
- EIDE or Parallel Port versions
- 1500+ 1.44MB floppy disks
- 3+ CD ROM games

Call for latest pricing

CASTLEWOOD

2.2 GB Disk

\$79

BU-ORB005

BUORB000

BUORB001

BUORB005

2.2Gb Internal EIDE ORB Drive

2.2Gb External Parallel ORB Drive

2.2Gb ORB Disk

\$399

\$449

\$79

RICOH

CD-RW Drives

When every second counts...

Accelerated in every way. The birth of a new high-speed CD-R/W Drive.

CD-R/RW Drive

MP7060 Series

Horizontal & Vertical installation possible.

Fastest CDRW Drive Around



Write
CD-R

Rewrite
CD-RW

Read

6x 4x 24x

BUFFER MEMORY
WRITING/READING SPEED
AVERAGE ACCESS TIME
INSTALLATION

2MB

Writing: 6x (CD-R), 4x (CD-RW)

Reading: Max. 24x (CAV)

Less than 120msec. (24x)

Vertical with eject button on top/Horizontal

The MP7060 Series offers further advances in reading/write speed. Ricoh's MP7060 Series CD-R/RW drives feature 6x CD-R recording speed, 4x CD-RW rewriting speed, and up to 24x CD-ROM/CD-RW disc reading speed. High-speed access makes CD-RW the ideal medium for daily data backup.

PRICE DROP

EIDE

\$595

MMRCC007

SCSI

\$665

MMRCC008

FORMATTED MEDIA

Ricoh (1x4x)CD-RW
Disc 74 Mins 650Mb

\$19

MMRCC003

Ricoh

CD-R Disc 74
Mins 650Mb

\$3

MMRCC004

Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME

*Please read our Terms and Conditions

Adelong Computers

25

Printers

EPSON

A4 Colour Inkjet

Value

Stylus Colour 460

- A Windows only printer, the EPSON STYLUS COLOR 460 is ideal for first time users, students and families experimenting with colour.
- 4ppm Black/2.5ppm Colour
- 720 x 720 DPI

\$235

PREPS028



Home User

Stylus Colour 660

- Perfect Photo Quality printer for desktop publishing at home. It features true 1440 x 720 dpi resolution.
- 5ppm Black/3.5ppm Colour
- 1440 X 720DPI

\$305

PREPS029



SOHO

Stylus Colour 760

- Delivers a precisely controlled ink droplets - the result is greater detail and smoother halftones. It's PC and Mac. compatible and offers USB connectivity.
- 7ppm Black/8.8ppm Colour
- 1440 X 720DPI

\$510

PREPS030



Specialist Printers

Professional

Stylus Photo 860

- The EPSON STYLUS COLOR 860 is a revolutionary new printer targeted at business and professional graphics users wanting maximum colour output combined with speed and affordability.
- 9.5ppm Black/9.3ppm Colour
- 1440 x 720 DPI

\$615

PREPS031



Office Colour

Stylus Colour 900

- It also offers flexible connectivity, Serial, USB, Parallel and optional ethernet. The combination of printing technologies ensure it is a high-speed, high-image quality printer.
- 12ppm Black/11.7ppm Colour
- 1440 X 720DPI

\$779

PREPS024



Over Size Colour

Stylus Colour 1160

- The new EPSON STYLUS COLOR 1160 is a revolutionary printer targeted at business and professional graphics users wanting maximum colour output combined with speed and affordability and the versatility of printing larger than A3. USB and Parallel interfaces.
- 9.5ppm Black/9.2ppm Colour
- 1440 x 720 DPI

\$Call

PREPS032



Photo Printers

Photo Colour

Stylus Photo 700

- Industry-leading 1440 dpi resolution this new printer offers the highest image quality of any home-use inkjet printer available today. What's more, it's ability to deliver both photographic colour and black text printing makes it ideal for All your home printing needs.
- A4, A5, Envelope, Index Cards, Photo paper
- 1440 x 720 DPI

\$419

PREPS011



Graphic Reproductions

Stylus Photo 1200

- Introducing the A3+, six-colour photo-reproduction quality inkjet printer for graphic artists and professional photographers. The EPSON STYLUS PHOTO 1200 delivers 1440dpi, full-bleed A3 prints with ink droplets invisible to the naked eye
- A3+, A4, A5, Envelope, Index Cards, Photo paper
- 1440 x 720 DPI

\$965

PREPS025



Scanners

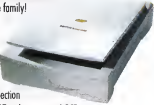
ScanJet 3200C

This affordable scanner features HP's exclusive Intelligent Scanning Technology to optimize photos, drawings and text automatically. And, you can pair it with your color printer to make color copies. Here's a versatile scanner for the entire family!

- 30bit internal
- 600 x 1200 DPI
- 9600 DPI enhanced
- Parallel port connection
- HP PrecisionScan LT with automated OCR

\$179

IDHP0020



ScanJet 3300C

For easy scanning and copying, try the HP ScanJet 3300C. Setup is a breeze with the USB interface and Windows 98. Just plug it in. You can scan or copy at the touch of a button.

- 36bit internal
- 600 x 1200 DPI
- 9600 DPI enhanced
- Windows 98 USB
- HP PrecisionScan LT with automated OCR
- Push button Scan and Copy

\$239

IDHP0027



ScanJet 5200C

The HP ScanJet 5200C Business Series color scanner delivers quality results up to three times faster than other scanners. One button starts any project! The HP ScanJet 5200C offers hassle-free connectivity through the parallel port, or Universal Serial Bus (USB).

- 36bit internal
- 600 x 1200 DPI
- 9600 DPI enhanced
- USB and Parallel port connection
- HP PrecisionScan 2.0 with automated OCR

\$455

IDHP0023



Adelong Computers

Refer to our website for a great range of Printer Cartridges



INTERNET WEB SITE:

<http://www.adelong.com.au>

e.mail: info@adelong.com.au

HEAD OFFICE & SERVICE

54 Rosebery Avenue

Rosebery NSW 2018

Ph: (02) 8344 3188

Fax: (02) 9697 9777

CITY OFFICE

127 York Street

Sydney NSW 2000

Ph: (02) 9267 5272

Fax: (02) 9267 5042

BubbleJet

Value

BJC-2655P

- Unbelievable value with this versatile bubblejet printer. For even greater versatility, the BJC-2655P offers the option of PhotoRealism inks. The PhotoRealism inks for photorealistic prints at a low price.
- 3.4ppm/ 0.5ppm Colour
- 720 x 360 DPI

\$135

PRCAN026



Home User

BJC-2000SP

- The user-friendly BJC-2000SP features dual ink tank for true blacks. Meet the one-stop solution for all your home-office printing needs. The optional colour scan head can be used for colour scans, OCR and faxing. Windows®95 or 98 only.
- 720 x 360 DPI Resolution
- 5ppm/2ppm Colour

\$175

PRCAN029

NEW



Laser Beam

Desk Laser

LBP-800

- Compact desktop 8ppm laser printer with face up or down paper delivery, 125 page Multipurpose Tray and single sheet Manual Feed Slot. Comprehensive job control via Canon Advanced Printing Technology driver software including Match Paper Size, Multipage per Sheet, collate, Form Overlay, Customer Paper Size, Toner Saver and Automatic image Refinement modes.
- 8ppm
- 600 x 600 DPI

\$575

PRCAN030

NEW



PRCAN018 LaserBeam LBP1760 **\$1735**

BubbleJet

SOHO

BJC-6000

- Presenting the ultimate in Speed, Quality, and Cost-Effectiveness. The new standard in colour printing from Canon. Using 6 colour printing and drop modulation technology, the BJC-6000 produces photorealistic images.
- Separate ink tanks for each colour
- 8ppm Black / 5ppm Colour
- 1440 x 720 DPI

\$475

PRCAN028



Professional

BJC-7100

- Need to print high quality colour images at high speed, then the 7 colour photo realism system in the Canon BJC-7100 will be the perfect choice. Capable of photorealistic printing on plain paper, this high speed bubblejet is perfect for the demanding graphics user.
- 8ppm/ 5ppm Colour
- 1200 x 600 DPI

\$515

PRHPD025



Compact

BJC-80

- Portable printing solution with all the features of a desktop printer. Drop modulation technology and features that are exclusive to the portable environment like IRDA. Best of all it is only 1.4Kg and fits in half a briefcase.
- AC/ Battery Powered
- 4.5ppm/ 1ppm Colour
- 720 x 360 DPI

\$335

PRCAN000



Instant Scan Capabilities

IS-12 Scanner head \$135 PRCAN001

Scanners

Value

FB-330P

- Parallel
- A4 36-bit Scanner
- 300 x 600 DPI Optical Resolution
- Includes Canon Software Bundle

\$135

IOCAN010

PRICE DROP

Parallel Interface

SOHO

FB-630P

- Parallel
- A4 36-bit Colour Scanner
- 600 x 1200 DPI Optical Resolution
- Includes Canon Software Bundle

\$175

IOCAN011

PRICE DROP

600 x 1200 DPI

USB

FB-630U

- USB A4 36-bit Colour Scanner
- 600 x 1200 DPI Optical Resolution
- Windows 98, iMac & Mac G3 Compatible
- Includes Canon Software Bundle & Canon Mac Plug-in (Canon Scan Toolbox in Place of Scangear Mac Adobe Photo Deluxe 20.)

\$229

IOCAN012

NEW



Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190
RESELLER ENQUIRIES WELCOME
*Please read our Terms and Conditions



Refer to our website for a great range of Printer cartridges

Adelom Computers

Hot New Products

Professional Office Printer

Deskjet 9700Cxi

- The premier photo-quality printer for busy professionals who take their image very seriously. Featuring stunning photo-quality with PhotoREt II, and laser like text at up to 12ppm.
- Innovations like automatic two sided printing, USB connection and extra large 150 sheet paper tray are exclusive to the 9700Cxi.
- 12ppm Black/ 10ppm Colour
- 2400 x 1200 DPI PhotoREt II

\$795

PRHP0063



All in One

Office Jet T Series

- The latest Deskjet technology is used in the new HP T series OfficeJet. You get stand alone fax capabilities as well as scan, copy and print functions. All of this using HP's PhotoREt II, which means that image quality is excellent and print speed is faster than ever. All T series come with OCR and imaging software.

T65

- 11ppm Black/ 8.5ppm Colour
- 600 x 600DPI PhotoREt II
- 10 Speed dials

\$1185

PRHP0065

T45

- 9ppm Black/ 6.5ppm Colour
- 600 x 600DPI PhotoREt II

\$989

PRHP0064



DeskJet

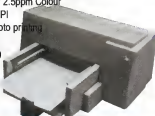
Economy

Deskjet 610C

- Inexpensive and easy to use, the HP Deskjet 610C printer produces affordable, high-quality colour and black printing for all your home and school needs.
- 5ppm Black/ 2.5ppm Colour
- 600 x 600 DPI
- Optional Photo printing

\$239

PRHP0061



Value

Deskjet 810C

- Produce projects with photo-quality images and crisp black text for school and home easily, quickly and creatively with the new HP Deskjet 810C printer.
- 6.5ppm Black/ 4.5ppm Colour
- 600 x 600 DPI Photo REt II

\$339

PRHP0058



Home

Deskjet 830C

- For people who want a versatile printer to work faster and smarter. Featuring PhotoREt II and HP's Colour Layering Technology. This printer is the perfect all round machine, it has both parallel and USB connections.
- 8ppm Black/ 5ppm Colour
- 600 x 600 DPI PhotoREt II

\$389

PRHP0062



OfficeJet

Professional

Deskjet 880C

- Your creative printing projects will look their best with the HP Deskjet 880C printer. Whether it's spectacular colour photos or elegant type you want, the Deskjet 880C can bring your imagination to life.
- 8ppm Black/ 5ppm Colour
- 600 x 600 DPI Photo REt II

\$475

PRHP0051



Office Colour

Deskjet 895Cxi

- The HP Deskjet 895Cxi delivers outstanding results that give you a competitive edge. Photo-quality colour enriches your documents with persuasive power. And crisp, rich blacks produce laser-quality text and graphics to impress the most discerning audience.
- 10ppm Black/ 6ppm Colour
- 600 x 600 DPI Photo REt II

\$639

PRHP0043



Over-Size PhotoColour

Deskjet 1120C

- Get the big picture with the HP Deskjet 1120C Professional Series printer. Photo-quality colour and versatile printing at sizes up to 11 x 17 inches make it ideal for businesses that want printing options, not printer limits.
- 6.5ppm Black/ 4.5ppm Colour
- 600 x 600 DPI Photo REt II

\$785

PRHP0055



LaserJet

Laser Quality

LaserJet 1100

- You need the convenience and privacy of a personal printer. With the HP LaserJet 1100 printer, you can put fast, personal laser printing for business right on your desk.
- 8ppm Black Laser
- 600 x 600 DPI
- 120 sheet paper tray
- Optional Scanner attachment

\$785

PRHP0041



Personal Laser

LaserJet 2100

- The HP LaserJet 2100 family offers versatile printing solutions for individuals and small workgroups. The LaserJet 2100 comes with outstanding features and offers a high degree of flexibility for your business requirements.
- 10ppm Black Laser
- 1200 x 1200 DPI
- 300 sheet paper tray

\$1345

PRHP0047



Workgroup Laser

LaserJet 4050

- HP LaserJet 4050 series printers set yet another benchmark, affording you the latest in networking printing technology backed by unparalleled quality, reliability and compatibility.
- 16ppm Black Laser
- 1200 x 1200 DPI
- Postscript 2 emulation
- 500 sheet paper tray

\$2299

PRHP0057



INTERNET WEB SITE:

<http://www.adelong.com.au>

e-mail: info@adelong.com.au

HEAD OFFICE & SERVICE

54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 8344 3168
Fax: (02) 9667 9777

CITY OFFICE

127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5042



**HEWLETT
PACKARD**

Printers

OfficeJet

Economy

OfficeJet 635

- The HP OfficeJet 635 is a colour printer, colour copier, colour scanner and plain paper fax. This is the best value All-in-One product that makes it easy to complete your work.
- 5ppm Black/ 2ppm Colour
- 600 x 600 DPI Photo REI
- 150 sheet paper tray

\$685

PRHP0033



Colour Faxing

OfficeJet 725

- The HP OfficeJet Series 700 prints, faxes, scans and copies all in color. That's right-it even sends and receives color faxes with other color fax machines. You can even scan and send color documents to anyone with an email address.
- 5ppm Black/ 2ppm Colour
- 600 x 600 DPI Photo REI
- 150 sheet paper tray

\$779

PRHP0055



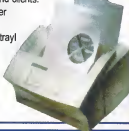
Office Laser

LaserJet 3100

- The HP LaserJet 3100 is a versatile business tool that delivers convenient printing, faxing, copying and scanning capabilities in a single laser device, and enables you to communicate more effectively with customers and clients.
- 6ppm Black Laser
- 600 x 600 DPI
- 100 sheet paper tray

\$1365

PRHP0034



OfficeJet

Flatbed

HP Office R45

- The reliable HP OfficeJet R45 fits right into the busiest home office or small business. It provides printing, scanning, and copying, all in colour, and all in one easy-to-use product. That saves space, reduces clutter, and simplifies set-up.

- 11ppm Black/ 8.5ppm Colour
- 600 x 600 DPI Printing
- 600 x 2400 DPI 30 bit Flatbed Scanning
- 100 sheet paper tray



\$1449

PRHP0056

Office Automation

HP Office R65

- The reliable HP OfficeJet R65 Series gives you high quality performance and versatility for professional results. The razor-sharp text and fast, photo-quality color printing makes documents stand out, whether they're financial spread sheets or color brochures.

- 11ppm Black/ 8.5ppm Colour
- 600 x 600 DPI Printing
- 600 x 2400 DPI 30 bit Flatbed Scanning
- 100 sheet paper tray
- 30 page automatic document feeder

\$1645

PRHP0059



SAMSUNG

SAMSUNG LASER PRINTERS Challenge the Limits of business Performance!

Office Laser Printer

Business Laser Printer

Workgroup Laser Printer

ML-5000A

- Fast 8PPM Printing Speed
- True 600 x 600 DPI Outstanding Resolution
- HP®PCL®5e Compatible Emulation
- Various 45 scalable Fonts
- One-piece Integrated Toner & OPC imager of 5000 Pages at 5% Coverage
- Easy to Use-Easy installation

\$599

PRSAM000

Printer Toner Cartridge for ML-5000A

\$199

INSAM003

5000 pages per cartridge

ML-6050

- Fast 12PPM Printing Speed
- True 600 x 600 DPI Outstanding Resolution
- HP®PCL®6 Compatible Emulation
- Various 45 scalable Fonts
- One-piece Integrated Toner & OPC imager of 5000 Pages at 5% Coverage
- Easy to Use-Easy installation

\$899

PRSAM001

Printer Toner Cartridge for ML-6050

\$199

INSAM004

5000 pages per cartridge

ML-7000

- Fast 17PPM Printing Speed
- Superior Printer Performance
- 100MHz RISC Processor
- First Page Printing Time of Under 13 Seconds
- HP®PCL®6 Compatible Emulation
- Optional Postscript Level II
- Optional Ethernet Card for Robust Network Connectivity
- Standard Duplex Printing Function

\$1599

PRSAM002

Printer Toner Cartridge for ML-7000

\$299

INSAM005



**SECOND TRAY
FEEDER IS AN
OPTIONAL EXTRA**



Sales staff are available (est)
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESALER ENQUIRIES WELCOME
*Please read our Terms and Conditions

Refer to our
website for a
great range
of Printer
Cartridges

Adelung Computers

Data Switches

Never again will you need multiply monitors, keyboards and pointing devices with the range of CPU Switching devices. A single keyboard, mouse and monitor can control up to 8 computers simultaneously without any cable changes. These CPU Switches are digital and require only the push of a button. Excellent for network administrators or anyone who wishes to control 2 or more computers hassle free!

Features:

- Supports Mouse/KB emulation for automatic bootup
- Supports VGA, SVGA & Multisync monitors
- LED's give current status
- Easy to install & use

Master View Plus

- PS/2 style or AT style keyboard and mouse connectors.
- Microsoft Intellimouse, Logitech First Mouse+, Mouse Man+
- Mouse Conversion - PS/2 Mouse Controls All Connection PCs
- Coscodable To three Levels

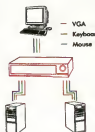
- CS-122 Switch between 2 PCs. Features:

- VGA Bandwidth of 180Mhz
- VGA resolution of 1600x1200 @60Hz



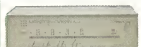
DSAD037

\$275



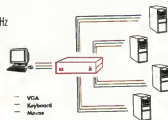
- CS-114 Control up to 4 PCs with the CS-114.

- VGA Bandwidth of 180Mhz
- VGA Resolution of 1024x768 @80Hz
- Support intellimouse wheel



DSAD038

\$375



- CS-128

- 8 Port Switch Box



DSAD036

\$695

Item Code	Description	Price
CBGEN127	AT CABLE SET for CS-128	\$39
CBGEN128	PS/2 CABLE SET FOR CS-128	\$39

Master View Plus

- Microsoft Intellimouse, Logitech First Mouse, Mouse Man+ ...Support
- Mouse Conversion - PS/2 Mouse Controls All Connected PCs
- PS/2 Style Keyboards Controls All PCs
- Superior Video Quality - Up to 1920 x 1440
- Coscodable To Three Levels
- LED Display For Easy Status Monitoring
- Rack Mountable
- Microphone and Speaker Support CS-1008, and CS-1016

EXCELLENT
FOR
MULTIMEDIA

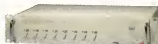
- CS-138 Control up to 8 PCs with the CS-138. Features:

- VGA Bandwidth of 180Mhz
- VGA Resolution of 1600x1200 @60Hz

DSAD041

\$755

Rack mountable PS2 interface



- CS-1008 Audio Support

- Up to 8 PC Systems per Switch
- Connect up to 256 PC Systems
- 180Mhz VGA Bandwidth

DSAD045

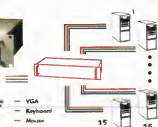
\$795

- CS-1016 Audio Support

- Up to 16 PC Systems per Switch
- Connect up to 512 PC Systems
- 180Mhz VGA Bandwidth

DSAD046

\$1350



CPU SWITCH CABLE SET

each cable set connects to one computer.

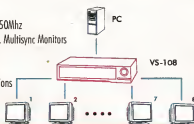
Code	Model	Price	Code	Model	Price	Code	Model	Price
CBGEN098	3M AT Cable Set CS122/114	\$35	CBGEN143	1.8M AT Cable Set CS122/114	\$29	CBGEN169	3M AT Cable Set CS1008/1016 Audio	\$39
CBGEN099	3M PS/2 Cable Set CS122/114/130	\$35	CBGEN144	1.3M PS/2 Cable Set CS122/114/130	\$39	CBGEN170	5M PS/2 Cable Set CS1008/1016 Audio	\$50
CBGEN127	3M AT Cable Set CS128	\$35	CBGEN146	10M PS/2 Console Extension M/F	\$65	CBGEN171	5M PS/2 Cable Set CS1008/1016 Audio	\$50
CBGEN128	3M PS/2 Cable Set CS128	\$35	CBGEN148	3M PS/2 Cable Set CS1008/1016 Audio	\$39			

VIDEO SPITTERS

can duplicate PC video signals and amplify them for transmission to multiple monitors. These splitters are capable of supporting high band widths, which can easily accommodate the latest resolution technology. An excellent choice for presentations or broadcasting demos or special events.

Specifications:

- Supports Bandwidths to 350Mhz
- Supports VGA, SVGA, XGA, Multisync Monitors
- Max. Cable to 65 Meters
- Excellent for high quality multimedia and presentations



VS-132

2 Port Video Splitter
1920 x 1440@80Hz

\$99

DSAD048

VS-134

4 Port Video Splitter
1920 x 1440@80Hz

\$175

DSAD049

VS-138

8 Port Video Splitter
1800 x 1440@80Hz

\$235

DSAD050

1.8m Video Splitter to Monitor Cable **\$9** CBGEN035



INTERNET WEB SITE:

<http://www.adelong.com.au>
e-mail: info@adelong.com.au

HEAD OFFICE & SERVICE

54 Rosebery Avenue
Rosebery NSW 2018
Ph: (02) 8344 3188
Fax: (02) 8344 3177

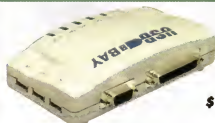
CITY OFFICE

127 York Street
Sydney NSW 2000
Ph: (02) 9267 5272
Fax: (02) 9267 5242

Adelong Computers

USB Devices

USB HUB with Printer Port and Serial Port



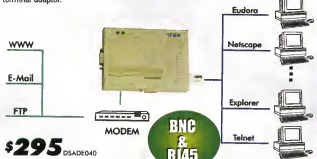
\$165 DSADE044

- 1x parallel, 1x serial port
- Full compliance with USB Spec Rev 1.0
- Warning LED indicator for faulty or dummy USB port.
- Reliable transmission for 5 meters cable segment.

- Over current detection protection & recovery.
- Plug & Play capability for outside peripherals.
- Support UHCI & OHCI spec.
- Windows 95/98/NT

IP SHARING DEVICE

With everybody on your network had Internet Access but not the high costs and complexity associated with multiple accounts. If this is you, then the IS-100 IP Sharing Device is for you. By using a single Internet account with the IS-100, your whole network can have Internet Access simultaneously. The IS-100 can also act as a DHCP server and offer Firewall protection and connects to the Internet through either a 56K modem or ISDN terminal adapter.



\$295 DSADE040

USB ADAPTER

USB A CABLE



\$15 CBG1155

USB B CABLE



\$15 CBG1156

USB ETHERNET ADAPTER

The USB Ethernet Adapter provides an easy way to connect a USB-enabled desktop or laptop PC to a 10BASE-T Ethernet LAN. It uses a USB type A receptacle for connection to the USB port and RJ-45 receptacle for connection to the network. No more internal PC cards to deal with. Just plug it in and your ready to go (Plug & Play). Compatible with desktop and notebook computers. For use with IEEE802.3 10Base-T LANs.

\$95 DSADE043



USB TO IEEE-1284 BRIDGE

Connect your printer to your PC's USB Host controller with ease. Transparent and full automatic support for true bi-directional communication between your computer and your printer with no conflicts or installation hassles. Free up your parallel for other devices such as ZIP drives, Scanners and CD-ROMs by moving your printer to a USB port today!



\$55 CBG1160

USB TO MODEM ADAPTER

With the UC-232, ATEN's new USB to Modem Adapter, installing an external modem is a snap. Free up your serial ports for other devices while IRQ conflicts will be a thing of the past. With our UC-232, installing a modem has never been easier. Just connect one end of the adapter to your modem and the other to your computer's USB port.

\$69 DSADE042



EXTERNAL IDE CD-ROM CASE

It has never been easier to add a CD-ROM to your PC. With the Portable CD-ROM, you are only one cable away from numerous CD titles and flexibility. Connects to your Windows or DOS PC via the parallel port (LPT). A printer passthrough interface is also included so that your printer can work simultaneously with your CD-ROM.

\$130 CAAD006



EXTERNAL SCSI CD-ROM CASE

Use your internal SCSI CD-ROM or drives as a portable & removable device with the External SCSI CD-ROM Case. Easy installation for both MACs & PCs the External SCSI Case comes with a SCSI ID selector so that changing SCSI IDs is as easy as clicking a switch. The external SCSI interface is a Centronics 50 with pass through.

CAAD007 SCSI I Centronics Case **\$135**
CAAD015 SCSI II DB50 Case **\$150**
CAAD016 SCSI III DB68 Case **\$185**



ADELONG DELUXE MINI CASE AT

W: 180mm
D: 340mm
H: 390mm

\$65 CAAD000



ADELONG ATX CASE AT/ATX

W: 200mm
D: 450mm
H: 410mm

\$95 CAAD014
Styles may vary



DELUXE AT/ATX 230 WATT DESKTOP CASE

W: 442mm
D: 473mm
H: 155mm

\$135 CAAD012



Power Supplies

Code
PSCG000

Model
200W AT POWER SUPPLY

Price
\$35

Code
PSCG002

Model
200W ATX POWER SUPPLY

Price
\$55

Sales staff are available [est]
9am-6pm Monday to Friday,
10am-4pm Saturday

Technical Support
(5 Days a week 9am-6pm)
Phone (02) 8344 3160

Sales Hotline 02 8344 3190

RESELLER ENQUIRIES WELCOME
*Please read our Terms and Conditions



Refer to our
website for a
great range
of Cables

Adelong Computers

HARRIS TECHNOLOGY

Direct Web-Links
here on each page

INDEX

PCs/Notebooks/Servers

- 4-7 Toshiba Notebooks
- 8 HP Desktops
- 9 HP Notebooks
- 10 Compaq Desktops
- 11 Compaq Notebooks
- 12 Acer Desktops
- 13 Acer Notebooks
- 14 IBM Desktops-N/work
- 15 IBM Notebooks
- 16/17 SGI Desktops
- Palm PC's & Modems**
- 18 3Com Palm PC's
- 19 Cassiopeia
- 19 Dynalink Modems
- 23 Xircom Modems
- 25 D-Link Modems
- 24 Verbatim CE Modem
- 35 Kingmax PC-Modems
- Graphic Cards**
- 20 Innovation
- 38 Matrox

Back-up & Networking

- 21 APC Back-Up
- 22 Serverlink
- 23 Xircom Hubs etc.
- 24 Proxim Wireless
- 25 D-Link
- 26/27 Netgear
- 28 DIGI RAS
- 35 Kingmax
- Storage**
- 30 iomega
- 36 Adaptec SCSI cards
- 37 Seagate Backup tapes / HDD's

Keyboards, Mouses, Joysticks, Controllers

- 30/31 Logitech
- Multimedia, Speakers, CD-ROM, CD/RW & DVD
- 32 Yamaha CD's Spkr's
- 33 Ricoh CD-R/RW
- 34 Verbatim CD-R/RW
- 39 MMT CD's DVD
- Printers & Scanners**
- 40/45/47 HP
- 41 Tektronix
- 42 QMS Printers
- 43 Canon
- 44 Epson
- 46 Agfa
- 60 Lexmark

Software Applications

- 48 Symantec / Norton
- 49 Thumbs Plus
- 50 Visio
- 51 Computer Associates
- 52 Powerquest
- 53 Dragon Systems
- 53 Network Associates
- 54 Microsoft S/W
- 55 Microsoft PRESS
- 56 Adobe
- 57 Corel
- 58/59 Scholastic
- 60 Macromedia
- 61 Micrografx
- 62 Disney
- 63 Brotherbund
- 64 Other Information

North Ryde-North Sydney-Web



NORTH RYDE

45 Epping Road, North Ryde, NSW 2113. On the corner of Epping Road and Wicks Road close to Microsoft.

Ph. Reception (02) 8879 5000
Ph. Telephone Sales (02) 8879 5095
Ph. Retail Showroom (02) 8879 5130
Facsimile (02) 8879 4000



WORLD WIDE WEB

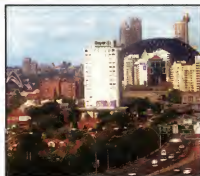
Go to www.ht.com.au
You can see over 30,000 computer related products, pricing, availability - live online, anytime-anywhere.

ORDERING

Phone, Fax, drop in to one of our locations - open 7 days per week - or order online through our website.

Contact details - for ALL locations.

Main Reception 1300 13 5555
Sales 1300 13 9999
Customer Service 1300 13 8888
Facsimile 1300 13 6666
Email info@ht.com.au



NORTH SYDNEY

Ground floor, Bayer Building, 275 Alfred Street North, North Sydney, NSW 2060.

Ph. Retail Showroom (02) 8879 5135
Ph. Customer Service/Pickups (02) 8879 5140
Facsimile (02) 8879 5137

See toll free numbers below for ANY location.



NEW!

Now you can collect **Fly Buys** points when ever you purchase computer products from Harris Technology. See our back page for more details.



HARRIS TECHNOLOGY



ht.com.au Pty. Ltd. ACN 007 870 484
A member of the Coles Myer Ltd. group

Delivery Australia-wide

Under 3Kg	\$9
3Kg - 10Kg (e.g. printer)	\$15
Over 10Kg (e.g. system)	\$30
Sydney city (only) over \$500	Free

Microsoft®

Check here for the latest information

Web
Direct

www.ht.com.au/cat/microsoft

Office 2000 - Working the Web



Microsoft Office 2000

Microsoft Office 2000 offers a multitude of new features which extend desktop productivity to the Web, streamlining work processes and simplifying how individuals and organisations share, access, and analyse business information.

Just a few of the new or improved features of Office 2000:

HTML as Companion File Format provides universal viewing of documents • Send E-mail directly from your Office programs • Let Office fix missing or

corrupted files • Make changes to Web pages easily • Enable team members to add comments and hold discussions about documents posted on an intranet site • Save a document to HTML and Office 2000 automatically selects the appropriate graphic format • Add live data from the Web into your formulas or charts • Add new data without reformatting cells • Import data from the Web into Excel • Easier to create, edit, and delete hyperlinks within documents, even to graphic hyperlinks • Create tables directly in Word 2000, Publisher 2000, FrontPage 2000 and PowerPoint 2000 • Place Interactive Charts on Web Pages and in E-mail • and much more!!

	Standard	Small Business	Professional	Premium	Premium + IntelliMouse	Developer
Word 2000	✓	✓	✓	✓	✓	✓
Excel 2000	✓	✓	✓	✓	✓	✓
Outlook 2000	✓	✓	✓	✓	✓	✓
Powerpoint 2000	✓	✓	✓	✓	✓	✓
Publisher 2000		✓	✓	✓	✓	✓
Small Business Tools		✓	✓	✓	✓	✓
Access 2000			✓	✓	✓	✓
FrontPage 2000				✓	✓	✓
PhotoDraw 2000				✓	✓	✓
Dev. Tools & Database Runtimes						✓
Part number	(75956)	(75960)	(75958)	(75959)		(75957)
FULL VERSION	\$ 719	719	864	1,159		1,528
Part number	(78477)	(78481)	(78479)	(78480)	(77958)	(78410)
UPGRADE	\$ 390	395	495	595	625	865

- Word 2000
- Excel 2000
- Outlook 2000
- PowerPoint 2000
- Publisher 2000
- Small Business Tools
- Access 2000
- FrontPage 2000
- PhotoDraw 2000

- Word processing package including many design features that gear it for the Web
- Spreadsheets package integrating Web enabled data collaboration and information sharing
- E-Mail communications package with calendar and contact management facilities
- Presentation package with remote presentation capabilities to lift meeting presentations to new heights
- Desktop Publishing and design package for easy and inexpensive production of quality publications
- Includes Small Business Custom Manager, Business Planner, Direct Mail Manager & Small business Financial Manager.
- Database package used to create simple, useful databases, with improved interface to other Office 2000 applications
- Designed for creation and editing of Internet and Intranet Sites
- Photo Editing and Illustration package, all in one slick, smooth, and easy to use integrated package



Fly Buys.
Collect
Fly Buys
points on
your
Computer
Hardware &
Software
when you
purchase
from Harris
Technology.
See back
page.

Documented

Page
3

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

Ground floor
275 Alfred St
North Sydney

TOSHIBA

Web
Direct

www.ht.com.au/cat/toshiba

Ideal for Frequent Flyers: Portégé



Ultra-Portable

The Toshiba Portégé is the ultimate mobile executive's mobile computer. Slim enough to go anywhere, work anywhere. sleek enough to turn heads. Everywhere. Refined form and subtle curves combined with ultra reliable magnesium alloy sets new standards in industrial design, strength and reliability.

From (79063)

\$4,497

Long Term Rent*

T.A.P.** **\$33.99**

per week

Now includes
10/100 Network
LAN

Only
1.4kg!!

Built in
modem

- Pentium II 300MHz
- 6GB HDD
- 64MB RAM
- 10.4" TFT



See Web Direct Link for "LIVE" pricing. You can also see check if we have one of display click NOW in the When Avail column.

Fly Buys

Harris
Technology
now offers
Fly Buys.
Collect
Fly Buys
points when
purchasing
from us.



Toshiba

Install options

For a small extra charge we can install your chosen options into your new Toshiba: a modem, memory, a network card, etc...

Call Harris Technology on 1 300 13 9999 for more information.

Model	Portégé 3110CT	Portégé 7020CT
Processor	Pentium II 300MHz	Pentium II 366MHz
RAM Std/Max	64/128 MB	64/192 MB
Hard Disk	6GB	6GB
Screen	10.4" TFT	13.3" TFT
Display	800 x 600	1024 x 768
CD-ROM	No	No
Mic & Spkr	Yes	Yes
Battery Life	3+ hours	2+ hours
Port replicator	No	No
Select bay	No	No
DVD capable	No	Yes
Weight	1.4 kg	1.9 kg
Warranty	3 Years	3 Years
DAA modem	Yes	Yes
Op. System	Win 95/98	Win 95/98
Rent 3 Yrs.**	\$33.99/wk*	\$49.80/wk*
Inc Tax	\$4,497	\$6,590
Part number	(79063)	(72305)

December

Page

4

HARRIS TECHNOLOGY™

Pricing** and specifications herein are subject to change without notice



Cheques OK with 2 x Valid ID
or T/T. Call for details.

TOSHIBA

Register on-line for discounts!

**Web
Direct**www.ht.com.au/cat/toshiba

Perfect for Office Escapees: Tecra

Spectacular capabilities

The Toshiba Tecra 8000 Series is the ideal business desktop-replacement mobile computer. With a Tecra, you are never chained to a desk.

This notebook has everything on one platform making enterprise-wide solutions easy. An integrated V.90 56K modem, power to burn, all in a package weighing only 2.9kg. The possibilities are endless.

- Celeron 400MHz
- 64MB RAM
- 6.4GB HDD
- 14.1" TFT

From (79069)

\$5,650

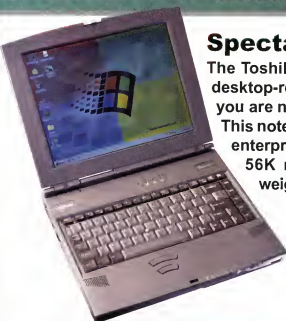
Long Term Rent* T.A.P.**

\$42.70 per week**Fly Buys**

Harris
Technology
now offers
Fly Buys.
Collect
Fly Buys
points when
purchasing
from us.

Shop on
the Web,
from your
home or
office.

- Search on over 34,000 computer products
- See the latest pricing, information and availability
- Build your own configurations

www.ht.com.auPage
5

Model	Tecra 8000	Tecra 8000	Tecra 8000
Processor	Celeron 400MHz	Pentium II 366MHz	Pentium II 400MHz
RAM Std/Max	64/256 MB	64/256 MB	64/256 MB
Hard Disk	6GB	6GB	10GB
Screen	14.1" TFT	14.1" TFT	14.1" TFT
Display	1024 x 768	1024 x 768	1024 x 768
CD-ROM	24x max.	24x max.	24x max.
Mic & Spkr	Yes	Yes	Yes
Battery Life	3+ hours	3+ hours	3+ hours
Port replicator	No	No	No
Select bay	Yes	Yes	Yes
DVD capable	No	No	No
Weight	2.9 kg	2.9 kg	2.9 kg
Warranty	3 Years	3 Years	3 Years
DAA modem	Yes	Yes	Yes
Op. System	Win 95/98	Win 95/98	Win 95/98
Rent 3Yrs.**	\$42.70/wk*	\$46.47/wk*	\$57.70/wk*
Inc Tax	\$5,650	\$6,150	\$7,634
Part number	(79069)	(79086)	(79071)

Op. System	Win NT 4.0	Win NT 4.0	Win NT 4.0
Rent 3Yrs.**	\$43.79/wk*	\$48.01/wk*	\$58.08/wk*
Inc Tax	\$5,795	\$6,349	\$7,685
Part number	(79070)	(79087)	(79072)

**NEW
MODELS**

** Limited
availability for
Tecra 8000
Win95/98 & NT
models



Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**Do you want
Fly Buys with
that?**

TOSHIBA

Web
Direct

www.ht.com.au/cat/toshiba

For Independent Types: Satellite

Value built-in

The award-winning Toshiba Satellite Series is a range of affordable small business or home office mobile computers. From the home to the office, the unique all-in-one design means you never have to leave functionality behind.

From (79064)

\$2,929

Long Term Rent*

T.A.P.** **\$22.14**

per week

Intel Celeron 400MHz
4GB HDD
64MB RAM
13.1" DSTN

Models
with DVD
also
available!



Toshiba

For corporate and government

Buying for your organisation? Harris can work with you to supply under 'bid' pricing for appropriate large volume needs. We can hold stock for you and configure to your needs. Call and ask for Colin Rigley on 1 300 13 9999.

Rental rates subject to conditions: to approved purchasers, rental figures shown are for 36 month terms. Please call us for the latest figures.

Model	with DVD!!		with DVD!!	
	Satellite 2590CDS	Satellite 2590CDT	Satellite 2590XDVD	Satellite 4090XCDT
Processor	Celeron 400MHz	Celeron 400MHz	Celeron 400MHz	Celeron 400MHz
RAM Std/Max	64/192 MB	64/192 MB	64/192 MB	64/192 MB
Hard Disk	4GB	6GB	6GB	4GB
Screen	13.1" DSTN	12.1" TFT	14.1" TFT	14.1" TFT
Display	800x600	1024 x 768	1024 x 768	1024 x 768
CD-ROM	24x max.	24x max.	DVD: 20x CD	24x max.
Mic & Spkr	Yes	Yes	Yes	Yes
Battery Life	2.5+ hours	2.5+ hours	2.5+ hours	2.5+ hours
Port replicator	No	No	Yes	Yes
Select bay	No	No	No	No
DVD	No	No	2.4x	No
Weight	3.1 kg	3.1 kg	3.1 kg	3.1 kg
Warranty	1 Year	1 Year	1 Year	1 Year
DAA modem	Yes	Yes	Yes	Yes
Op. System	Win 95/98	Win 95/98	Win 95/98	Win 95/98
Rent 3Yrs.**	\$22.14/wk*	\$26.65/wk*	\$34.20/wk*	\$32.41/wk*
Inc Tax	\$2,929	\$3,525	\$4,525	\$4,288
Part number	(79064)	(79066)	(78981)	(86062)

with DVD!!

Satellite 4100XDVD

Pentium II

400MHz

64/192 MB

6GB

14.1" TFT

1024 x 768

DVD: 20x CD

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

December

Page

6

**HARRIS
TECHNOLOGY™**

Pricing** and specifications herein are subject to change without notice



Cheques OK with 2 x Valid ID
or T/T. Call for details.

TOSHIBA

Register on-line for discounts!

Web
Direct

www.ht.com.au/cat/toshiba

Options for Toshiba Notebooks

Fly Buys

TOSHIBA EDO Memory Upgrades

32MB for Tecra 8000/ Portege 7000/ Satellite 4000	(29356)	\$199
32MB for Portege 3110	(81078)	\$205
64MB for Tecra 8000/ Portege 7000/ Satellite 4000	(29348)	\$349
64MB for Portege 3020	(77229)	\$487

TOSHIBA Battery Packs

For Satellite 4000/4010/2520CDT and others	(21930)	\$129
For Portege 3010/3020 (Lithium Ion)	(73665)	\$139
For Satellite 4000 Series	(72109)	\$129
For Tecra 8000 (Lithium Ion)	(29358)	\$278

TOSHIBA High Capacity Battery Packs

For Portege 3010/3020	(72475)	\$278
For Portege 7000/7020	(66479)	\$330

TOSHIBA Battery Charger

For Tecra 8000	(29357)	\$489
----------------	---------	--------------

TOSHIBA Universal AC Adapter

For Tecra 8000/Satellite 4000/4010 and others	(44200)	\$134
---	---------	--------------

TOSHIBA Additional 2 Year Warranty

For Satellites with TFT Display	(21729)	\$182
---------------------------------	---------	--------------

TOSHIBA Docking Station

For Portege 7000/7010/7020	(65958)	\$659
----------------------------	---------	--------------

TOSHIBA Port Replicators

For Tecra II 750/780/8000	(79226)	\$725
For Satellite 4030/4060/4080XCDT	(74088)	\$345

TOSHIBA Desk Station V+

For Tecra 500/550/650/700/750/8000 Series	(25446)	\$1,352
---	---------	----------------

TOSHIBA Carry Bags

Toshiba Friend Carry Bag	(75901)	\$78
Leather Bag for A4 Notebooks	(68408)	\$205
Classic Leather Notebook Carry Bag	(79770)	\$207

TOSHIBA

More Options

Have a look at the
Web Direct Link:
[www.ht.com.au/cat/
toshiba](http://www.ht.com.au/cat/toshiba)
And why not register
on-line for even
better pricing?

Want to know more?

For the latest
pricing and
information on
these and
many more
Toshiba
options, please
check out the
Web Direct
Link.
Or call the
Harris
Technology
Call Centre
staff. They are
ready to
answer your
questions and
help you make
the right
choice on
1300 13 9999.



Pricing in this
catalogue
might change
after going to
print so please
call us, or see
our website for
the latest
pricing.

December

Page
7

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**Order
on-line!**



HEWLETT PACKARD

More Info?

Web
Direct

www.ht.com.au/cat/hp

Power for today's computing



HP Vectra

If you are looking for a top-performing corporate PC that's also easy to manage, the HP Vectra PC is the right choice for you. These award-winning desktop PCs lead the industry in making corporation IT environments highly manageable, stable and secure.

MultiPurpose, flexible

Quality and reliability

Latest technology

* Prices are ESP and are current at time of print. Prices are subject to change without notice.

Part Number	Processor	RAM	Hard Disk	CD ROM Drive	LAN	Op. System	Price without monitor*
(80449)	Pentium III 450MHz	32MB	4.3GB	Optional	✓	Win95	\$1,579
(75840)	Pentium III 450MHz	64MB	8.4GB	24x var.	✓	NT 4.0	\$1,999
(75831)	Pentium III 450MHz	64MB	4.3GB	Optional	✓	NT 4.0	\$1,799
(75832)	Pentium III 450MHz	64MB	8.4GB	32x	✓	Win95	\$1,899

Optional HP Ultra VGA 15" monitor (73463) **\$529**

Fly Buys.

Collect
Fly Buys
points
at Harris
Technology
HP
Monitors



HP 15"
Monitor
(72507)

\$424

HP 17"
Monitor
(65211)

\$564

HP 19"
Monitor
(78152)

\$998

HP Brio

Now, more than ever, growing businesses can enjoy the latest PC technology at HP's best prices. HP Brio PC's come with additional features that assist growing businesses with everyday tasks, including the exclusive HP Brio Center for On-screen support.

- Celeron 500Mhz
- 64MB RAM
- 8.4GB HDD
- CDS 48x
- LAN
- Windows® 98
- 17" monitor
- Pentium III 500Mhz
- 64MB RAM
- 8.4GB HDD
- CDS 48x
- LAN
- Windows® 98
- 17" monitor

See Web Direct Link or call for pricing



NEW
MODELS
!!!

HP Kayak

Model: Kayak XA D6734N
Processor: Pentium III 500MHz
RAM: 128MB
HDD: 6.4GB UATA
CD-ROM: 32X IDE
Graphics: Elsa Gloria Synergy (AGP), 8MB SDRAM
LAN: Optional
Operating System: NT 4.0

(81526) **\$2,579**

Model: Kayak XA-S D7984N
Processor: Pentium III 500MHz
Dual Processor
RAM: 128MB
HDD: 9.1GB SCSI
CD-ROM: 32X IDE
Graphics: Elsa Gloria Synergy (AGP), 8MB SDRAM
LAN: Combo SCSI/LAN Card
Operating System: WIN NT 4.0

(76186) **\$4,119**



HARRIS TECHNOLOGY™

Pricing** and specifications herein are subject to change without notice



Cheques OK with 2 x Valid ID or T/T. Call for details.



HEWLETT PACKARD

More Info?

Web
Directwww.ht.com.au/cat/hp

HP understands your business needs

Omnibook XE2

Celeron 433 - 32MB RAM - 4.8GB HDD - 12.1" TFT

Processor	C433	PII 400MHz	PII 400MHz
HDD	4.8GB	6.0GB	6.0GB
RAM	32MB	64MB	64MB
OS	Win 95/98	Win 95/98	Win NT
Screen	12.1" TFT	14.1" TFT	14.1" TFT
CD-ROM	24x	DVD	DVD
Modem	56K	56K	56K
Part #	(86463)	(86461)	(86462)
Rent/week	\$23.90	\$35.51	\$36.80
Price	\$3,159	\$4,699	\$4,869

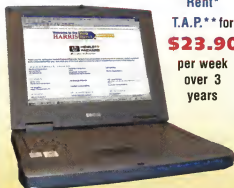
From: (86463)

\$3,159

Rent*

T.A.P.** for

\$23.90

per week
over 3
years

HP Jornada 420

Handheld

The colour PC that fits in your pocket!
Brilliant 256 colour 240x 320 pixel LCD, 32bit processor, 100MHz 8MB RAM

PRICE DROP

(74453)

\$799



Jornada 820 Palmtop

8.2" VGA, 640 x480, 256 col., 190MHz, 16MB RAM, 16MB Burst Mode ROM, Win CE 2.2 Pocket editions of Ms Word, Excel, Powerpoint Outlook, Internet Explorer (71162)

\$1,699

Processor	P II 366MHz	P II 400MHz
HDD	6GB	6GB
RAM	32MB	32MB
Screen	12.1" TFT	12.1" TFT
CD-ROM	No	No
Modem	No	No
OS	Win 95/98	Win 95/98
Part #	(73317)	(83295)
Rent/Week	\$33.93	\$37.71
Price	\$4,490	\$4,990
OS	Win NT	Win NT
Part #	(73313)	(83272)
Rent/Week	\$36.20	\$40.95
Price	\$4,790	\$5,419

Omnibook 900

Pentium II 366MHz - 32MB RAM - 6.4GB HDD - 12.1" TFT

From: (73317)

\$4,490

Rent* T.A.P.** for **\$33.93**
per week over 3 years

Processor	P II 366MHz	P II 366MHz	P II 400MHz
HDD	4.8GB	6.4GB	10GB
RAM	64MB	64MB	64Mb
Screen	14.1" TFT	14.1" TFT	14.1" TFT
CD-ROM	24x	24x	DVD
Modem	No	No	No
OS	Win 95/98	Win 95/98	Win 95/98
Part #	(84892)	(76972)	(80224)
Rent/Week	\$39.92	\$45.27	\$55.89
Price	\$4,885	\$5,990	\$7,395
OS	Win NT	Win NT	Win NT
Part #	(84891)	(76971)	(82151)
Rent/Week	\$37.78	\$46.82	\$57.43
Price	\$4,998	\$6,195	\$7,599

Omnibook 4150

-Pentium II 366MHz
-64MB RAM
-4.8GB HDD
-14.1" TFTOther
Models
available!From: (84892) **\$4,885**Rent* T.A.P.** **\$39.92**

per week over 3 years

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

Ground floor
275 Alfred St
North Sydney

Page
9



DeskPro Desktop Computers

COMPAQ DeskPro EP

Long-lasting performance and powerful technology at the right price

- **Processor performance** - A boost for e-commerce, web, creation and multimedia.
- **Simple, flexible design** - lets you switch from a desktop to a minitower quickly and easily.
- **Intelligent manageability** - Industry-leading tools facilitate setup and day-to-day activities such as asset tracking and software management
- **Peace of mind** - Industry-standard compatibility, rigorous testing, strong partnerships and superior quality provides the confidence to run your business efficiently, cost-effectively and with superb reliability.



With Windows 98	Processor RAM Std/max Hard Disk Drive Graphics CD-ROM Drive Part Number Price Rent T.A.P	Pentium III 450MHz 64MB/384MB 10GB SMART II Ultra ATA Matrox Millennium G200-SD AGP 8MB SDRAM 32x (75487)	Pentium III 550MHz 64MB/768MB 10GB Ultra ATA Matrox Millennium G200-SD AGP 8MB SDRAM 32x (79712)	Celeron 500MHz 32MB/256MB 4.3GB SMART II Ultra ATA Embedded Intel 3D 8MB video memory Optional (84336)
		\$2,079	\$3,219	\$1,379
With WinNT4.0	Part Number/Price Rent T.A.P	(75486) \$2,165 \$16.36 /week/3yrs	(79713) \$3,299 \$24.93 /week/3yrs	(82764) \$1,528

Call Harris Technology on 1300 13 9999 or see Web Direct Link for more information on these and other Compaq systems.



COMPAQ DeskPro EN

Outstanding consistency, performance, serviceability and manageability for enterprise environments

- **Latest Processor Performance** for performance to suit your business demands
- **Intelligent manageability** - Industry-leading tools facilitate day-to-day activities such as asset tracking and software management
- **Highly stable** - Latest core technologies delivered in incremental models avoid unnecessary transition. Pre-installed drivers maintained as delivered with updates available on the Web.

With Windows 98	Processor RAM Std/max Hard Disk Drive Graphics CD-ROM Drive Part Number Price Rent T.A.P	Pentium III 450MHz 64MB/384MB 6.4GB SMART II Ultra ATA ATI Rage Pro Turbo AGP 2X 8MB SDRAM 32x (75483)	Pentium III 550MHz 64MB/64MB 6.4GB Ultra ATA ATI Rage Pro Turbo AGP 2X 8MB SDRAM 32x (xxxxx)	Celeron 500MHz 64MB/768MB 6.4GB SMART II Ultra ATA Embedded Intel 3D 8MB video memory Optional (86050)
		\$2,299	\$Call	\$1,974
With Win NT4.0	Part Number/Price Rent T.A.P	(75482) \$2,365 \$17.87 /week/3yrs	(79594) \$3,499 \$26.45 /week/3yrs	(86164) \$1,937 \$14.34 /week/3yrs

Optional
Compaq
monitors
for these
Deskpro
systems:

15":
(75487)
\$Call

17":
(75487)
\$Call



Armada Series Notebooks

COMPAQ Armada 1500C

- Intel Celeron processor 366MHz
- 128K integrated cache
- 4GB Hard Disk Drive
- 32 MB SDRAM Standard Upgradable 160Mb
- 24x max CD-ROM
- Removeable Diskette Drive 1.44MB
- On Screen Resolution 800x600
- 64-bit video graphics with 2MB SDRAM
- Integrated 16-bits Stereo Sound Card (Sound Blaster Pro compatible)
- Integrated Speakers
- Windows 95

Rent* **\$19.80** /week/3yrs,T.A.P (78188)

\$2,619

Affordable



Compaq Carepaqs

Upgrade your warranty - pay a little extra for complete peace of mind!

Deskpro 3
Yr Standard
On-Site 8x5
(71098)

\$279

Armada
1500/1700 3
Yr RTB 8x5
(77991)

\$215

Armada
3000/6000/
7000 3 Yr
OS 8x5
(77992)

\$165

*Rental rate
for
business
use,
includes
stamp duty
and FID for
NSW.
T.A.P.

Call 1300
13 9999 for
more
Compaq
Deskpro
options

COMPAQ Armada M300

Lighter, slimmer, tougher! From 1.39kg and under 2.3cm thin in a durable magnesium-alloy casing.

- Intel Mobile Celeron 333MHz Processor
- 11.3" CTFT SVGA (800 x 600)
- 64MB SDRAM standard, expandable to 128MB
- 4.3GB Hard Disk Drive
- Integrated Mini PCI V.90 / 56K modem
- Graphics capability - ATI RAGE LT Pro, 4MB of SGRAM
- 95%-sized full functioned keyboard for greater comfort
- Optional mobile expansion unit (MEU) for greater functionality and expandability
- Windows 95

Rent* **\$27.95** /week/3yrs,T.A.P (80331)

\$3,698

*Feather
Weight*



COMPAQ Armada M700

- Intel Mobile Pentium II 366MHz Processor
- 13.3" CTFT XGA (1024 x 768)
- 64MB SDRAM standard, expandable to 288MB
- 6.4GB Hard Disk Drive
- 24x max CD-ROM
- Integrated Mini PCI V.90 / 56K modem
- From only 1.95kg and is just 2.8cm thin
- Advanced graphics capabilities: 64-bit video graphics with 8MB SDRAM for increased colour depth and graphics performance.
- MultiBay support for floppy disk drive, a 24x CD-ROM or DVD-ROM drive; optional 2nd battery, 2nd HDD, or LS-120 drive
- Windows 95

Rent* **\$43.37** /week/3yrs,T.A.P (80336)

\$5,739

*Power
on the
Move*



Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**See page 2
for locations**

Enjoy World-Class Technology



17" CRT Acer monitor instead of the 15":

Add only **\$180** (xxxxx)

AcerPower S Series

Includes Acer 1555 15" CRT monitor + speakers

	AcerPower SE	AcerPower SN
CPU	Intel Celeron 433MHz	Intel Pentium III 450MHz
RAM	32MB PC-100	64MB PC-100
HDD	6.4GB	13GB
Graphics	4MB UMA VRAM	14MB Video Graphics Card
CD-ROM	40x max	40x max
OS	Win98 Second Edition	Win98 Second Edition
Other	10/100 Ethernet PCI card	10/100 Ethernet PCI card
Part #	(xxxxx)	(xxxxx)
Price	\$Call	\$Call



Fly Buys.

Collect
Fly Buys
points on
your
Computer
Hardware &
Software
when you
purchase
from Harris
Technology.
See back
page.

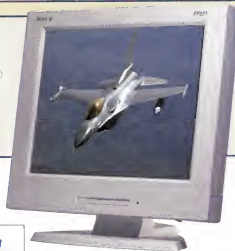
Acer LCD 15.1" TFT monitor

- Maximum resolution 1024x768@66 Hz
- 0.3 dot pitch
- 15.1" diagonal
- 120/100 degree viewing angle
- NUTEK, MPR-II & DPMS compliant
- VESA power saving
- iKey digital controls

Saves desktop space!

Model FP551 (83148)

\$2,299



Powerful Acer Aspire Desktops



Do you want
Fly Buys with
that?

Fly Buys.

New Acer Aspire models

	Pentium III 450MHz	Pentium III 500MHz	Pentium III 500MHz	Pentium III 600MHz
CPU	Pentium III 450MHz	Pentium III 500MHz	Pentium III 500MHz	Pentium III 600MHz
RAM	64MB	96MB	128MB	128MB
HDD	8.4GB	13GB	20.4GB	20.4GB
CD/DVD	40x CD-ROM	40x CD-ROM	6x DVD	6x DVD
V.90 Modem	Yes	Yes	Yes	Yes
Monitor	Acer Aspire 15"	Acer Aspire 17"	Acer Aspire 17"	Acer Aspire 17"
Part number	(xxxxx)	(xxxxx)	(xxxxx)	(xxxxx)
Price	\$1,995	\$2,499	\$2,999	\$3,499

Make a Smart IT Investment

 Slimline,
lightweight,
TravelMate
332T


Acer TravelMate Notebook Series

 Perfect combination of connectivity,
portability and design elements.

**New
models**


Model	332T	332T	506DX	512T	517TE
Screen	12.1" TFT	12.1" TFT	12.1" HPA	12.1" TFT	13.3" TFT
CPU	Pentium® II 366MHz	Pentium® II 366MHz	Celeron® 400MHz	Celeron® 366MHz	Pentium® II 366MHz
Memory	64MB	64MB	32MB	64MB	64MB
HDD	6.4GB	4.8GB	4.8GB	4.3GB	4.3GB
CD-ROM	24x	No	24x	24x	24x
DVD	No	2x	No	No	No
FAX/MODEM	56kbps	56kbps	56kbps	56kbps	56kbps
Op. system	Windows® 98	Windows® 98	Windows® 98	Windows® 98	Windows® 98
Part number	(84346)	(76172)	(xxxxx)	(xxxxx)	(84320)
Price	\$4,699	\$4,999	\$2,499	\$2,999	\$3,990



Our 2-hour warranty service is our commitment to you.

Everyone at Acer is committed to being there for you like no one else will.

That's why six out of ten of Australia's biggest IT users, use Acer PCs. And why Acer was rated No.1 in customer service and support by the Australian Personal Computer magazine survey.

 Our quality TravelMate notebooks now carry our guarantee of a 2-hour warranty service in Sydney, Melbourne, Brisbane, Canberra, Perth and Adelaide*. This means we'll fix your TravelMate notebook within two hours of you dropping it off at one of our service centres. Acer is the only computer company that can make that assurance to all its customers. Call 1300 366 567 or visit www.acer.com.au.

*Metropolitan areas only.

Acer Australia



Acer Altos Servers also available

Call 1300 13 9999 for information.



Discover

Page

13
Sales 1300 13 9999
Fax 1300 13 6666
Website www.ht.com.au
E-mail sales@ht.com.au
**See page 2
for locations**

IBMBusiness
PartnerFast delivery
Australia wideWeb
Directwww.ht.com.au/cat/ibmhw

IBM Desktops and Servers

IBMBusiness
Partner

PC 300GL Celeron 466MHz

IBM PC 300GL

Pentium II SMB
(81657)Intel Pentium II
400MHz

64MB RAM

6.4GB Ultra
ATA with
SMART HDD

512Kb cache

3D AGP Video
2MB SGRAM

Windows 98

Does not
include
monitor**\$1,539**

Model 6278S5A without Monitor (82497) IBM 15" Monitor G-51 (47189)

\$1,998**\$398**

Small business series

- Celeron 466MHz
- Micro tower (4x4), PCI
- 64MB RAM standard (512MB maximum)
- 8.4GB Ultra ATA/66 HDD with S.M.A.R.T. III
- Graphics: Intel 810, 4MB and Direct AGP
- Slots and bays (total/available) 4 (3) x 4 (1)
- CD-ROM 40x max
- Audio: SoundMAX
- Microsoft Windows 98 operating system installed

Comes Bundled with
Office 2000 Small
Business Edition**IBM**Business
Partner

NetFinity 3000 Server

Fly Buys.

Collect
Fly Buys
points on
computer
hardware
& software
from HT.

If your business is at the point where you need a server, but don't have a big budget, the IBM NetFinity 3000 is the affordable solution. Packed with power and scalability features that support file-and-print serving, workgroup productivity applications and shared Internet access, the IBM NetFinity 3000 is the reliable network foundation you need.

- Pentium III 500MHz
- 64MB RAM standard (768MB maximum)
- Maximum storage capacity 72.8GB
- 512KB Level 2 Cache
- CD-ROM 32x max
- 6x6 MiniTower
- Dial-in for control/monitoring/remote management
- Dial-out for alert notifications
- Slots and bays (total/available) PCI/ISA 6 (5) x 6 (4)

Model 847650U
(77555)**\$2,995**Rent* T.A.P.** **\$22.63**/wkl/3yrs

December

Page
14**HARRIS
TECHNOLOGY™**

Pricing** and specifications herein are subject to change without notice

Several finance methods
available, subject to approval

Computing Power & Portability

IBM

Business
Partner

ThinkPad 600E

The thin and powerful ThinkPad 600 notebook is a new breed of innovatively designed, reliable, easy-to-use mobile computers that translates form and function to new levels of sophistication. With a slim 36.5mm profile and travel configurations at approximately 2.3Kg, the stylish ThinkPad 600 is a truly perfect travel partner: maximum power, minimal weight, ingeniously designed for the way you work.

Call for
pricing on
other
models

- Mobile Pentium II 366MHz
- 64MB RAM (288MB max)
- 6.4GB HDD
- 13.3" 1024x768 TFT active matrix display
- PCMCIA support: 2 Type II or 1 Type III Card Bus
- CD-ROM 24x max
- Audio
- Fax/modem speeds: 56K
- Microsoft Windows 98

Do you want fly buys with that? Collect Fly Buys points on all your computer purchases from HT.

Model 26454AA (75313)

\$5,499
Rent* T.A.P.** for

\$41.56 per
week over 3 years

- As above but with Windows NT

Model 26458AA

(75314)

Rent* T.A.P.** for **\$48.74** per week over 3 years

\$6,450

IBM
ThinkPad
Deluxe
Koskin
Carry Bag
(31987)

\$176

IBM
Polyester
Carry Bag
(31986)

\$57

IBM
Over-
nighter
Carry Bag
(31989)

\$176

IBM
Deluxe
Leather
Carry Bag
(31990)

\$187

IBM
ThinkPad
CD-ROM
Pouch
(31991)

\$20



ThinkPad 600E
Pentium II 400MHz
26454BA

- 13.3" TFT display
- 10GB HDD
- 64MB SDRAM
- 56K Modem
- 24x Max CD-ROM
- Windows® 98

(81688) **\$7,249**

Rent* T.A.P.**
\$54.80 / week / 3 yrs



ThinkPad 600E
Pentium II 400MHz
26455BA

- 13.3" TFT display
- 10GB HDD
- 64MB SDRAM
- 56K Modem
- DVD-ROM Drive
- Windows® 98

(80244) **\$7,449**

Rent* T.A.P.**
\$56.30 / week / 3 yrs



ThinkPad 770Z
Pentium II 366MHz
95498IA

- 14.1" TFT display
- 14.1GB HDD
- 128MB SDRAM
- 56K Modem
- DVD-ROM Drive
- Windows® 98

(76861) **\$9,250**

Rent* T.A.P.**
\$69.90 / week / 3 yrs

IBM

Business
Partner

December

Page

15

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

Ground floor
275 Alfred St
North Sydney



Fly Buys.

High Performance Servers with Style

SGI 1400M Server for Windows NT 4.0

Quad Processor Capable



LINUX Server:

Ask about
the new
Linux
version of
the
SGI 1400,
fully
supported
by SGI!



Scalable server that exceeds requirements
for certification by Microsoft's worldwide
hardware quality lab

- 1x 550MHz Pentium III Xeon Processor (Quad processor capable, 500Mhz also available)
- 256MB ECC Memory (max 4GB)
- 9GB Ultra 2 SCSI Disk
- Windows NT 4.0 Server
- 6x Ultra2 SCSI hot-swap drive bays
- 7x PCI slots on 2 buses
- 19 Inch rack-mountable (optional kit required)
- High availability features: hot-pluggable disk drives, emergency management port, visual indicators for component health, redundant fan and power supplies, ECC memory
- Robust management and monitoring options, including Intel server control and SNMP support
- 1 Year Warranty (3 Year Option \$2,619)

SGI 1400M:

Rent * T.A.P.** per week over 3 years:

\$Call
\$Call

Rental Plan
subject to
Approved
purchasers.
Rental
figures
shown are
for 36
month
terms.
Please call
us for latest
figures. We
can obtain
fast
approvals.



Some of the
awards
SGI
products
have earned

1600SW Flat Panel Monitor:

MVP Award

PC Computing

Top 100 Products

VAR Business

Wired for 3D

3D Design

320 & 540 Visual Workstations:

Best of Show Award

Spring Comdex

Best New Product of the Year

FOSE '99

Silicon Graphics 1600SW Flat Panel Monitor

You'll never look at a monitor the same way again.

High resolution 17.3" 1600x1024 LCD monitor. 16.7 million colours (24-bit true colour, no dithering). Unique SuperWide screen displays two full pages. Supports ColorLock colour calibration. Ultrafine dot pitch (0.23mm) for professional quality image editing (110dpi).

Fast pixel response for video playback.
Dimensions incl. base: 17.8"W x 18.3"
x 7.3" D, 7.2Kg.

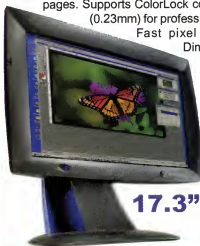
With 32MB Revolution IV PCI
Graphics Card:

(75447) **\$5,843**
Rent* T.A.P.** **\$44.15**/wk/3yrs

With 32MB Revolution IV AGP
Graphics Card:

(75448) **\$5,843**
Rent* T.A.P.** **\$44.15**/wk/3yrs

Would you like Fly Buys
points with that?



17.3"

December

Page

16

HARRIS
TECHNOLOGY™

Rent: Short or long term. Finance options available: IBM Easylease, AGC.



Cheques OK with 2 x valid ID
or T/T. Call for details.

Award Winning NT Visual Workstations

SGI Visual Workstations

Power Bundle Special - SGI 320 with SGI 1600SW Screen

SGI 320

- SGI Single Pentium III CPU 500MHz
- 9.1GB Ultra SCSI 10000 RPM HDD
- Cobalt Graphics Engine
- 128MB ECC SDRAM
- Windows NT Workstation 4.0
- 32x CD-ROM EIDE
- Polk Audio Stereo Speakers

PLUS

- Silicon Graphics 1600SW Flat Panel Monitor
- 17.3" display
- 1600x1024 resolution
- Digital Interface
- 3Yrs Next Business Day On-Site Warranty

\$9,799

Rent * T.A.P. ** **\$74.05** per week over 3 years

Dual Processor
Capable

Upgradable to
600MHz CPU

SGI 540

- Single Pentium III Xeon CPU 550MHz
- 1 x 9.1GB Ultra 2 SCSI HDD
- USB Keyboard & 3-button mouse
- Window NT Workstation 4.0
- 32 x CD-ROM EIDE

- 256MB ECC SDRAM
- Stereo Speakers
- Cobalt Graphics Engine
- 3 yrs on-site warranty, next business day

Pictured with Silicon Graphics
1600SW Flat Panel Monitor

Without Monitor:

\$Call

Entry level and other
configurations available
\$Call for pricing

Quad
Processor
Capable



What makes the SGI Difference?

Integrated Visual Computing Architecture (IVC) provides a tightly integrated combination of lightning-quick graphics processing, huge interconnects, and high-capacity graphics memory to move and process visual data at 3.2 GB/sec.

Cobalt Graphics Chipset, the heart of the Silicon Graphics 320 and 540 systems, includes high-performance 2D and 3D graphics processing, S-video, composite video, CD-quality audio, USB, and IEEE-1394, the 320 has three available PCI slots (540 has 6 available PCI slots) on two PCI-64 buses. Other features of the Cobalt™ graphics chipset which provide the stunning graphics performance include:

- * Hardware acceleration of 3D geometry, lighting, transforms, texturing, rendering and rasterization functions
- * Dynamically allocated memory that supports almost 1GB of texture memory
- * Extremely fast pixel fill
- * Real-time transfer of two simultaneous streams of video I/O
- * Support for resolutions up to 1920x1200 (24-bit double buffered)

SGI Systems have been designed with these applications in mind

3D Modelling: Creating & manipulating complex 3D models call for staggering amounts of system resource which only SGI systems can deliver.

Image editing and Manipulation: High resolution 2D images are becoming popular in DTP, only SGI systems have capabilities to handle this.

Video Editing: Silicon Graphics 540 Visual Workstation supplies the professional video interfaces & high systems bandwidth needed to work with un/compressed analog & digital video in real time.

Analysis: Silicon Graphics 540 Visual Workstation provides analytic capabilities far beyond most personal workstations. No other system has the power of an SGI.

Rental Plan
subject to
Approved
purchasers.
Rental
figures
shown are
for 36
month
terms.
Please call
us for latest
figures. We
can obtain
fast
approvals.

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**Open
7 Days**

Palm Slim Leather Case(63801) **\$49****Palm III 3-pack Stylus**(60675) **\$20****Palm III Cradle**(60673) **\$60****Palm V Cradle**(74669) **\$125****Palm V Leather Belt Clip Case**(74673) **\$50****Palm V Modem**(74668) **\$325****Palm V Hard Case**(74676) **\$75****Palm V Travel Kit**

For charging and synchronising without a cradle. HotSync cradle, plug adapters and AC charger

(74677) **\$110****Palm III series****PalmGlove**

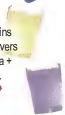
Shock-absorbent, water-resistant neoprene. Black:

(82231) **\$59**

Also available: purple, olive, royal blue, teal and yellow

**Palm III series Colour Shades**

This fun pack contains 3 translucent flip covers in blue, lime & aqua + 3 black plastic stylus.

(82253) **\$27**

Palm™ Connected Organisers



Palm IIIe™

Connected Organiser
One Touch Organisation



Imagine having your daily schedule, important phone numbers, lists, meeting times and more in one organised place. It's easy and affordable with a new Palm IIIe™ Connected organiser. And, at just 12cm tall and a mere 170g., it can go wherever you go - be it work, home, school or on vacation. Say goodbye to your bulky paper planner. The Palm IIIe™ connected organiser is an easy-to-use, pocket-sized way to keep track of your busy life. Choose from thousands of add-on applications. Internet ready. HotSync® cradle included. Stores approximately:

- 6,000 addresses
- 5 years of appointments
- 1,500 to-do items
- 1,500 memos
- 200 e-mail messages
- and lots of third-party applications.

(81158)

\$449

Excellent Palm™ Computing from Harris Technology

Palm™ connected organisers manage life's little details. It will help you stay on top of things everywhere you go. You can store thousands - literally thousands - of names, addresses, phone numbers, to-do's, and expenses, plus hundreds of e-mail messages. You can synchronise all your information with your computer at the touch of a button. More features: Infrared communication. Access your e-mail with the Palm Modem® accessory. Applications: Date Book, Address Book, Mail, To-do List, Memo Pad, Expense, Calculator, Security, Games, HotSync®.



Palm IIIx™

Connected Organiser
More of a good thing

The Palm IIIx™ organiser gives you twice the memory of the Palm III™, and an open connector slot for room to expand. New advanced LCD screen technology improves viewing in dim light conditions or bright sunlight. Stores approximately:

- 12,000 addresses
- 5 years of appointments
- 3,000 to-do items
- 3,000 memos
- 400 e-mail messages
- and lots of third-party applications.

(74373)

\$599
Collect Fly Buys Points**Intellisync Software 3.1**

Excellent Conduit software to work with the Palm IIIx. Enables users to sync their PalmPilot organiser with common personal info management, contact management and group scheduling applications.

(65266)

\$145

Palm V™

Connected Organiser
Slim, sleek and elegant



Sleek design, anodised aluminium case. Only half the thickness of a Palm III. All your names, addresses, phone numbers, appointments, to-do's and email messages right at your fingertips. Recharge in minutes a day. And, a full charge lasts for up to a month. Stores approximately:

- 6,000 addresses
- 5 years of appointments
- 1,500 to-do items
- 1,500 memos
- 200 e-mail messages
- and lots of third-party applications.

\$799

(86148)

Collect
Fly Buys
Points

December

Page

18Collect
Fly Buys
Points**HARRIS
TECHNOLOGY™**

Rent: Short or long term. Finance options available: IBM Easylease, AGC.



Cheques OK with 2 x valid ID or T/T. Call for details.

CASIO®

Web
Direct

www.ht.com.au/cat/casio

World Smallest Multimedia Palm-size Device

Cassiopeia E-100

It's the ultimate in mobile information management. With its big colour display and powerful 131 MHz processor, the E-100 is a multimedia powerhouse that enables users to view movies or surf the Internet in vivid colour with rich stereo sound. Microsoft Windows CE ensures tight integration with Windows 95/98/NT.

More Power •

Windows CE 2.11 •

Touch Screen •

131MHz Processor •

Scroll Wheel •

16MB RAM/16MB ROM •

Voice Recorder •



Feature packed:

- Large 240x320, 65,536 colour 16-bit bright back-lit TFT display • Flashing alarm indicator
- Weight 9.0 oz. • 3 assignable application launch buttons
- Infrared (IrDA 1.0) for wireless exchange of data • Voice Recorder, Calendar, Contacts, Tasks, Send & receive e-mail (optional modem adapter required)
- Built-in microphone, speaker & stereo headphone jack • Auto PC Synchronization
- Touch screen with stylus

Collect Fly Buys points when you buy your Cassiopeia E-100 from Harris Technology

CASIO

Software included with

E-100:

- Outlook applications: Tasks, Contact, Calendar, Inbox for e-mail
- Note Taker
- Jot Natural Handwriting Recognition
- Voice Recorder
- Channels
- Calculator
- Dual-Time World Clock
- CASIO Menu and much more!

Put the power of
Windows CE® V2.11 in your
hand
(76521)

\$1,136

Dynalink

Web
Direct

www.ht.com.au/cat/dynalink

56K Modem with FREE Internet Access

Dynalink 56k External Modem

- V.90 / K56flex dual-mode for high Internet compatibility
- Plug 'n play, plus friendly QuickGuide for easy installation.
- Send and Receive faxes with high speed and clarity from your PC.
- FaxStream DUET, Caller ID, Voice Mail Mode.



SPECIAL
OFFER!

5 Year
Warranty

(54361)

\$145

For a limited time only, With all Dynalink modems you are entitled to the following:

6 Months FREE** Internet Access* With TPG

*SIX MONTHS OF FREE INTERNET HOURS WITH TPG IS AVAILABLE IN: Sydney, Penrith, Kiama/Wollongong, Lake Macquarie, Melbourne, Brisbane, Southport, Canberra, Adelaide, Perth, Hobart, Launceston and Darwin.

**one off \$39.95 connection fee, 300MB DOWNLOAD LIMIT PER MONTH. UNLIMITED 3 HOUR CONNECTIONS. OFFER AVAILABLE FOR A LIMITED TIME.

Dynalink ISA or PCI

- PnP Installation
- V.90/K56flex dual mode for high Internet compatibility
- Telephone Answering Machine Mode
- Send and receive faxes with high speed and clarity from your PC

ISA card PCI card
(77577) (72909)

\$129 \$84



Dynalink PCMCIA modem

- PnP Installation
- V.90/K56flex dual-mode for high Internet compatibility
- Send and receive faxes with high speed and clarity from your PC.

(73978)

\$173



5 Year
Warranty

MagicXpress TView

- TVIEW TV/FM Tuner Video Capture Card
- Fully featured, including Teletext, remote Control and Optional FM Tuner
- Resizable window, right up to full-screen (640x480).

(72860)

Standard **\$145**

(78482)
With FM **\$169**



Fly Buys

Harris Technology now offers Fly Buys. Collect Fly Buys points when purchasing from us.

Sales 1300 13 9999

Fax 1300 13 6666

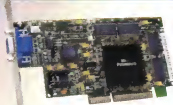
Website www.ht.com.au

E-mail sales@ht.com.au

Do you want
Fly Buys with
that?

Page
19

The Ultimate in CAD solutions



(85898)

\$559

PERMEDIA³ Create!

Premium graphics productivity for Web Design and creative professionals

Building on 15 years of high quality driver experience, Permedia3 Create! is a stable high-performance graphics card that Web and business professionals can depend on.

- flicker free 2048x1536 resolution with full 32-bit Z. Stencil buffers and GID planes in hardware deliver high-performance in windowed 3D applications
- Pentium® III and 3DNOW!™ Optimized
- Processor renders 100% of OpenGL 1.2 and Direct3D primitives



(85899)

\$299

OXYGEN[™] ACX

Oxygen[™] ACX combines Permedia[®] 2 graphics processor with the outstanding display list drivers of Soft Engine 4. Features include birds-eye view, PanBars and ZoomBar. For professional 3D rendering Oxygen ACX provides 100% OpenGL 1.1 acceleration, Gouraud shading, and Z-buffering.

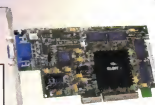


(85900)

\$1,699

OXYGEN[™] GVX1

Accelerated Geometry for workstation professionals. An industry first that lets you manipulate up to 256MB of textures in a single scene. Oxygen GVX1 implements a full demand-paged virtual texture sub system in hardware, using on-board graphics memory to cache huge textures stored.

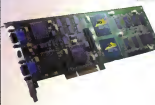


(85902)

\$599

OXYGEN[™] VX1

Oxygen VX1 boosts the productivity of design professionals with best-of-class 2D and 3D performance through innovative technology such as Virtual Texturing that shatters the limitations of on-board graphics memory, fully accelerated Volumetric Rendering and Pentium® III optimized PowerThreads SSE OpenGL[®]



(85903)

\$2,699

OXYGEN[™] RPM

Oxygen RPM delivers an expansive 64Mbytes of unified graphics memory, high resolution true-colour displays and precision Z-buffering at the accessible price you've been waiting for. At last, the workstation-strength graphics you have always wanted at a price that won't break the bank.



(85904)

\$4,299

OXYGEN[™] GMX

The Oxygen GMX, with the sizzling hot GLINT[™] GMX 2000 chipset packs full 3D-geometry and lighting acceleration with scalable rasterization processing into an industrial strength, high-end professional graphics solution. Oxygen GMX delivers incredible performance for your most complex and demanding CAD projects.



(75919)

\$599

Voodoo3

Designed to support the latest digital flat panel displays, the Voodoo3 3500 will include 3Dfx's proprietary flat-panel support, LCDfx. Voodoo3 3500 will be available in limited quantities for consumers who require flat panel support. Please note that this is a Limited Edition item, designed to support latest digital flat panel monitors

Fly Buys.

Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See page 64

Disclaimer

Page
20



Power Back Up = Power Protection

APC Back-UPS Pro®

For home
and office PCs

Smart battery backup and high performance surge
suppression for Windows 95 and NT PCs



- PowerChute® Plus software lets your UPS shut down your applications gracefully in the event of an extended power failure
- Additional outlet for protection of printers
- Audible alarms
- Phone/modem protection
- User replaceable, hot swappable batteries

APC Back-UPS Pro 280si (76636) **\$325**

APC Back-UPS Pro 420si (76637) **\$399**

APC Back-UPS Pro 650si (76638) **\$580**

APC Smart-UPS®

For small
office servers

- Instantaneous power from the Back-UPS prevents data loss caused by outages and brownouts
- Includes APC PowerChute® Plus software
- Hot-swappable, user-replaceable batteries
- SmartBoost™/SmartTrim™ for maximum on-line operation from 156-300 volts
- Three battery back-up/surge protection outlets
- One surge outlet for printer, fax, scanner etc.
- 10 Base-T/100 Base-TX network protection

Protects your data by supplying network-grade battery
backup when power fails



APC Smart-UPS 420 (67199) **\$512**

APC Smart-UPS 620 (67198) **\$665**

See the APC Web based sizing guide to help you select the appropriate UPS: www.apcc.com

APC PowerStack Power Protection®

For hubs,
switches, routers

Optimized Power protection for racked/stacked
internetworking equipment and thin servers



- Rackmountable: PowerStack models take up only 1U of rack space to protect internetworking equipment in racks where space is at a premium
- Regulates low quality power for continued on-line operation
- User replaceable, hot swappable batteries
- Powers up to 4 devices
- PowerChute® Plus software included

APC PowerStack 250 (78992) **\$499**

APC PowerStack 450 (78991) **\$629**



Back-UPS
for budget

PC's!

300va

\$199

(56229)

500va

\$230

(56230)

650va

\$298

(56231)

Power-
Chute®
Plus

Software for
standalone PCs
which will shut
down Windows,
SMART drive
and all Windows
applications
gracefully in the
event of an
extended power
failure.

for Windows®

\$94

(42950)

for Win NT

\$129

(19558)



APC

Symmetra

Power Array

8kVA, exp. to

16kVA

\$14,990

(71087)

So good we

use it

ourselves!

Sales 1300 13 9999

Fax 1300 13 6666

Website www.ht.com.au

E-mail sales@ht.com.au

See page 2
for locations

ServerLink™

Web
Direct

www.ht.com.au/cat/serverlink



Fly Buys.
Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See back page.

ServerLink to computer cable

Each end of the cable fans out into three connectors. 2m cable for PS/2 mouse, keyboard and monitor (63972)

\$17

5m cable (63976)

\$76

2m cable for AT/Serial mouse, keyboard and monitor (63974)

\$17

5m cable (63977)

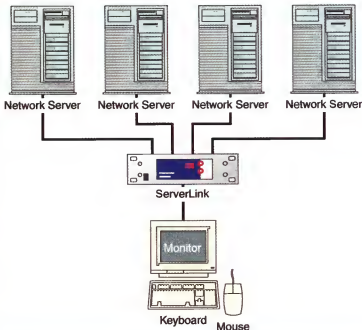
\$76

Multi-Server Controller

Control up to 256 network servers with a single monitor, keyboard & mouse

With a ServerLink you can monitor and fully control up to 256 network servers with just one monitor, keyboard and mouse. Save money on expensive monitors, create more working space and cut down on your power costs.

Designed and manufactured in Australia by an award winning engineering company, ServerLink is packed with features, providing total control of your ever expanding network.



- Select servers via On-Screen-Display
- Name servers for simple selection
- Mouse & keyboard emulation for flawless booting
- Scan Mode for periodic server monitoring
- Supports PS/2 and Serial mouse emulation
- Only one physical mouse required to operate both PS/2 and Serial Servers
- Backup power feature eliminates system power failure
- EPROM upgradable for future technology
- 8 and 16 port models 19 inch rack mounted design

• Available in 4, 8 and 16 port models

• 3 Year warranty

• Australian made



ServerLink™



Multi-Server Controller

From

\$470

(71652, 4-port PS/2)



Pop-up
Screen
Menu
Control

ServerLink™

**HARRIS
TECHNOLOGY™**

Rent: Short or long term. Finance options available: IBM Easylease, AGC.



Cheques OK with 2 x valid ID or T/T. Call for details.

December
Page
22

Xircom



Web
Direct

www.ht.com.au/cat/xircom

Stay connected with Xircom

Xircom PortStation - Port Expansion System

The simple way to connect your Windows computer to virtually any number of devices. Connect printers, scanners, digital cameras, keyboards, mice and more. Image the ease of installing all your devices via one standard USB plug!



NEW!

Supports all makes and models of Windows** computers with USB ports

Connects virtually any parallel, serial and USB devices

Interlocking "mix-and-match" modules can be added or removed at any time

Simply add or remove devices without reconfiguring or rebooting your computer

Modules snap into system for quick and easy installation



1. Choose the modules you need to connect devices to your computer.
2. Snap modules and end caps together.
3. Attach devices to PortStation modules.
4. Connect PortStation to your computer's USB port.

CompactCard™ Ethernet



(80166)

\$275

high speed, enterprise-wide E-mail access, Internet browsing and data synchronisation. Connects Windows CE hand-helds to 10Mbps Ethernet Networks • Rapidly synchronise and exchange data anywhere on the LAN at speeds nearly 200 times faster than a 56K serial connection. Low Power operation. Quick and easy installation.



Innovative Windows CE connectivity solution provides

CompactCard™ GSM



*** COMING SOON ***

wireless data communications via GSM phones. Send and receive E-mail, browse the Internet, and fax over a digital wireless GSM link at speeds up to 9600bps. Send & receive messages up to 160 characters. Synchronise your Windows CE handheld with Windows-based PCs from anywhere in the world.



Innovative connectivity solution provides Windows CE users with

PortStation Modules

End Caps

(82215)

\$195

7-port USB Hub Module: Adds 7 USB ports for printers, keyboards, mice, storage devices, etc.

(82217)

\$195

Parallel DB-25 Module: Adds one parallel port for printers.

(82218)

\$115

Serial DB-9 Module: Adds two serial ports for mice, handheld PDA cradles ext. modems etc.

(82219)

\$235

Serial PS/2 Module: Adds two serial ports for mice, keyboards, etc.

(82220)

\$125

Ethernet 10 Module: Provides connection to 10Mbps Ethernet networks.

(82221)

\$195

Modem 56 Module: Provides high speed 56K* modem connection.

(82222)

\$289

PortStation Kits (include end caps, AC power adapter and USB cable)

(82223)

USB Hub Starter Kit: 7-port USB Hub module

(82224)

\$276

Connection Starter Kit: 4-port USB Hub + DB-25 + Serial PS/2 modules

(82225)

\$365

Office Communications Starter Kit: DB-25 + Serial PS/2 + Ethernet 10 modules

(82225)

\$399

Xircom RealPort Value 56 Modem

High speed 56K modem functionality for notebooks. All connectors are integrated into the card providing a robust, reliable and easy-to-use solution. No cables to lose, no moving parts to break.

(72923)

\$255

Xircom RealPort Ethernet 10/100 + Modem 56K

Combines 10/100Mbps Ethernet-net, 56K modem, GSM, AMPS cellular and ISDN connectivity, in a single cable-free integrated PC Card. GlobalACCESS™. GSM upgradeable.

(61795)

\$619

Xircom RealPort Ethernet 10/100

High-performance 10Mbps and 100Mbps Ethernet connectivity for the most

(67216)

\$290

reliable access to information while in the office. Full-duplex Ethernet at 10Mbps.

*server download speed

**Win95 OSR2.1 (version 950b or 950c), Win98, WinNT 4.0 (SP3 and above) or Win2000

Fly Buys.

Want Fly Buys with that? See page 64 for details.

December

Page

23

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

Now at North Sydney & North Ryde

Symphony Cordless Modem



Lets you access the Internet from your Symphony cordless network without wires. Simply plug the Cordless Modem into your phone jack.

(xxxxx)

\$Call

The Leader in Wireless LANs



Symphony Cordless Networking

Symphony Cordless Networking products connect computers together without wires. Share printers, files and enjoy simultaneous Internet access anywhere in your home.

- Simultaneous Internet access with only one phone line, one ISP account
- 150 foot range, through multiple walls and floors
- True mobility for laptop users with pc card
- No hub required
- Fastest home network – 1.6 Mbps
- Connect up to 10 computers

Symphony Cordless Ethernet Bridge

If you have a cable modem, or ISDN router, or an ADSL gateway, the Symphony Cordless Ethernet Bridge allows you to connect your computers to the outside world through your high-speed access method. With a standard 10BaseT connection, installation is a snap.

\$939

(86014) Want Fly Buys points with that?



Symphony Awards

PCComputing



PC WORLD



Symphony PCI Card

With the Symphony Cordless PCI Card for your desktop computers, you can enjoy the benefits of networking without the hassles of installing tricky wires and cabling. Easy to install, so you'll be ready to seamlessly network with all your Symphony-enabled computers in no time.

(86018)

\$290



Symphony PC Card

If you're a laptop user, the Symphony PC Card will free you to roam. Slide the standard PCMCIA Type II PC Card into the card slot and Windows 95/98 will automatically recognize it and guide you through the installation process. In a matter of minutes you'll be enjoying mobile computing anywhere in or around your home or backyard.

(86017)

\$329



Symphony ISA Card

Install the ISA card into any free ISA card slot in your desktop computer, complete the software installation and you're ready to seamlessly network with all your Symphony-enabled computers. Go cordless today!

(86016)

\$290



Small-Medium Business Networks

D-Link DFE-660TX

56K Fax/modem
PCMCIA card V.90
and K56flex

This is a 32-bit high-performance dual-speed 10/100Mbps CardBus card designed to permit users on a move to easily connect to a network and share databases and resources in diverse environments. Supporting 20Mbps/200Mbps full duplex, this adapter is engineered to unleash the power of today's notebooks and turn them into robust stations or servers.

Also available:

Network Adapters

DM-560	(61678)	\$160
56K Fax/Modem PCMCIA card V.90 and K56Flex		
DE-660CT	(35862)	\$115
PC Card 10Mb with RJ-45/BNC connectors		
DFE-530TX	(62956)	\$59
PCI bus dual speed 10/100Mb network card		
DFE-570TX	(72786)	\$567
4 port PCI-bus 100Mb Fast Ethernet Server Interface card 4x200Mbps		
DFE-650TX	(56301)	\$180
PCMCIA dual speed 10/100Mb network card		
DFE-660TX	(69449)	\$178
32-bit PCMCIA PC-CardBus dual speed 10/100Mb		

D-Link DES-1016

D-Link DES-1016 Switch is designed to enhance workgroups performance while providing a high level of flexibility. The DES-1016 allows users to either connect 10Mb or 100Mb connections and boost response time and bandwidth.

- 16 port 10/100M dual speed
- Support Full/Half duplex
- Supports VLAN and port trunking



(69456) **\$1,198**

Also available:

Switches

DES-810	(53717)	\$815
10 port Fast Ethernet Switch with 8x10BaseT, 2x100BaseTX		
DES-815	(52206)	\$898
16port Fast Ethernet Switch with 12x10BaseT, 3x100Base ports		
DES-1008	(52207)	\$633
8-port dual speed 10/100Mb Smart Switch		
DES-1024	(76740)	\$1,667
24 port dual speed 10/100Mb Smart rack mount Switch		
DES-3224	(69457)	\$2,908
24 port dual speed Managed rack mount Switch		

D-Link USB Range

New from the D-Link USB Range:

These Universal Serial Bus hubs connect up to four USB peripherals or devices to their USB-ready PC. It provides out of the box industry standard Bus. It allows PC users to expand the number of USB ports on their systems.



DU-A2 - PCI Port USB Adapter	(78987)	\$56
DU-H4 - 4 Port USB Hub	(79131)	\$75
DU-H3SP - 3 Port USB Hub	(78989)	\$159

Also available:

Non USB Hubs

DE-809TP	(32350)	\$155
9-port Mini-Hub 9x UTP with Uplink Capability		
DE-809TC	(10388)	\$105
9-port 8x10Mb Hub with 1x Coax port		
DE-816TP	(51844)	\$295
16-port 10Mb Hub with 1x AUI/1x BNC Ports (Rackmount)		
DFE-904	(72789)	\$185
4-port 10/100Mb Dual Speed Hub		
DFE-905	(76617)	\$289
Fast Ethernet Network Kit		
DFE-908DX	(60558)	\$329
10/100Mb 8-port Stackable dual speed hub		

D-Link RAS Range

Dial-Up Router, Internet
Server plus Remote
Access Server.

- Simultaneously shares 1, 2, or 4 modems with regular phone lines
- Connect your entire network to the Internet with only one ISP account
- Let remote users access your LAN for email, the Internet etc.

DI-510 1 x WAN, 1 LAN Port ISIP* Router	(79398)	\$425
DI-540 4 x WAN, 1 LAN Port ISIP* Router	(79400)	\$1099
DI-524 2x WAN, 5 Port hub	(79399)	\$799

* Internet Server IP

Also available:

Print Servers/Routers/Modems

DP-300	(53598)	\$450
Dual Speed 10/100Mbps Multiprotocol Print Server 2 Parallel 1 Serial		
DP-602	(81535)	\$465
Internet Server		
DP-692	(85108)	\$579
2 port Internet Server with built in 9 port hub and uplink		
DP-802	(78985)	\$555
DP-802 Internet and Print Server		
DP-601M	(85107)	\$543
Internet Server for SOHO networks with built in 56K modem		



Fly Buys.

Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See the back page.

For all your small to medium business and home network needs please call for more information and pricing. We have an extensive range of fantastic D-Link products on our database.

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

Now at North Sydney & North Ryde

Cost-effective Connectivity Solutions

Analog Modem Router



model
RM 356

(70197) **\$579**

Connect multiple PCs to the Internet easily

Provides shared Internet access in a box. Small offices/home users can connect multiple PCs to the Internet with a single connection, using one ordinary phone line and one Internet Service Provider account.

Router • integrated 56K modem • integrated 4-port 10BaseT hub • DHCP server • Dynamic NAT+ • Dial-on-Demand-routing • Hi/fn (STAC LZS) compression • Five year warranty

ISDN Router



model
RT 328

(68900) **\$679**

Home office Internet access in a box.

Includes built-in ISDN TA, 128 MultiLink PPP, DHCP Server, Dynamic NAT+, Dial-on-Demand Routing. Setting new standards in ease of installation, features & price.

Provides Internet access, LAN-to-LAN intranet connection, and remote access for a single user, a small business, or a branch office over ISDN.

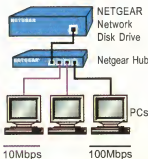


- No hassle of adding internal hard drives
- One-step installation on your PC. No complicated server setup or hardware installation required
- Provides performance close to that of an internal hard drive
- Microsoft, Unix, Novell compatible

Are you running out of space?



Add extra Hard Drive capacity to your network with **NETGEAR Network Disk Drives!**



model
ND 508

8GB

(79013) **\$1,199**

model
ND 520

20GB

(79014) **\$1,927**

NETGEAR Network Disk Drives are the first information appliances to use high speed networking technology to simplify the use and installation of storage space on the network. By using a high speed network instead of adding internal hard drives you can add disk capacity for storing customer files, pictures, applications, or any other data quickly & easily.

Fly Buys.

Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See back page.

Gigabit Switches

The FS509 and FS518 high-performance Fast Ethernet Gigabit switches provide a cost effective way to instantaneously boost network performance. Secure the power of Gigabit Ethernet to speed up server and backbone access. Automatic speed & full/half duplex sensing.

The GS504 Gigabit Fibre Switch is a high performance network switch that provides back-bone connectivity for power work-groups, data centers, and server farms.

model
FS 509

(76840)

\$1,749

Eight switched 10/100 Mbps ports + one 1000Mbps port (Gigabit E'net uplink)

model
FS 518

(81514)

\$2,917

Sixteen switched 10/100 Mbps ports + two 1000Mbps ports (Gigabit E'net uplink)

model
GS 504

(81515)

\$3,215

Four full-duplex Gigabit fiber ports
Netgear offers free, 24-hour phone support



Take the Work out of Networking

10/100Mbps Starter Pack



- 4 Port 10/100Mbps Hub
- 2x10/100 PCI NICs
- 2x Cable, Instal. Guide

These Network Starter Kits contain everything that Windows users need to start networking right away, all in one box.

DB 104

10/100Mbps Network Starter Kit (77292) **\$279**

10Mbps Starter Pack



- 4 Port 10Mbps Hub
- 2x10/100 PCI NICs
- 2x Cable, Instal. Guide

With this simple and affordable pack, NETGEAR brings the benefits of networking into the hands and budget of small businesses.

SB 104

10Mbps Starter Kit (13277) **\$157**

10/100 Dual Speed Hubs



These Netgear hubs connect multiple PCs to share printers, files, Internet access and e-mail communications. Mix and match 10 and 100Mbps PCs, servers and peripherals on the same network with ease and without the high cost and complexity of multiple hubs and bridges. All feature easy, plug-and-play installation, Auto-sensing dual speed ports & vista network ports with built-in LEDs.

DS 104 4-port Slimline (70795) **\$215**

DS 108 8-port Slimline (18755) **\$306**

DS 116 16-port Slimline (81519) **\$478**

Full connectivity among devices. Compact, sturdy, metal case.

DS 524 24-port Stack. (69474) **\$998**

Stack up to 8 hubs via provided cascade cables. Includes rack-mount kit. Plug 'n' Play.



10Mbps Ethernet Hubs



Vista jacks with built-in LED indicators • Uplink port for network expansion • Slim, sturdy metal case design • BNC/AUI backbone support Option • Limited lifetime warranty • Easy Plug and Play installation

EN 104TP 4-port Slimline (53456) **\$73**

EN 108TP 8-port Slimline (53458) **\$115**

EN 116 16-port Slimline (53459) **\$219**

EN 516 16-port Rackmount (17425) **\$248**

EN 524 24-port Rackmount (17435) **\$326**



- 16 or 24 10BASE-T ports
- Easyplug-and-play installation
- Vista network port with built-in LEDs
- BNC/AUI backbone support
- Internal power supply

10/100Mbps Fast Ethernet Switches

The NETGEAR FS104 and FS108 feature 4 or 8 switched 10/100 Mbps ports, auto-speed and duplex mode sensing. Versatile and compatible. Compact and easy to install. Vista jacks with built-in LEDs.

FS 105 5-port Slimline (84722) **\$299**

FS 108 8-port Slimline (70905) **\$425**



The NETGEAR FS 516 and FS524 switches provide powerful, network center performance

with all 16 or 24 ports capable of 10 or 100 Mbps, half- or full-duplex operation, automatic speed sensing. Ideal for segmenting networks into small, connected subnets. Vista network ports with built-in LEDs.

FS 516 16-port Slimline (60522) **\$1,419**

FS 524 24-port Slimline (77549) **\$1,470**

NETGEAR

FA310
Ethernet
Adapter.
10/100 PCI
(Speed
sensing,PnP)
(53460)

\$62

FA310
10-pack
Save
money!
(75734)
\$465



FA410
PCMCIA
Network
Card
(60071)

\$169



EA101
USB 10
Megabit NIC
(81289)
\$98



Remote Access Solutions

DSP (digital signal processor) adapters from Digi are cost-effective, high density remote access, fax, routing and unified messaging solutions for your network.

DataFire® RAS



Scalable Server-Based Remote Access Concentrators for Analog and Digital Connections

Essential to server-based communications solutions are reliable, standards-based communication adapters. Digi products have gained a reputation for compatibility, performance and reliability that is unmatched. The Digi DataFire Family of DSP based RAS concentrator adapters provides the widest compatibility and most powerful performance available in a PCI or CompactPCI slot. For demanding, server-based applications including modem-pooling, remote access, advanced fax, World Wide Web and branch office internetworking, you won't find a better product line than DataFire.

- Up to 60 K56Flex/V.90 modem channels per PCI slot
- Scalable configurations from 4 (BRI) ports and from 30 to 60 (BRI) ports
- Digi PortAssist SNMP Web-based manager-easy configurations & management
- Device Drivers Developers Kit
- Support for both analogue and digital connections

TAFire RAS 4 B4ST (85976) **\$4,099**

TAFire RAS 30 PE1 (85974) **\$12,199**

TAFire RAS 60 PE2 (85975) **\$17,942**

Call us on 1300 13 9999 or see Web Direct Link for the latest information and pricing on Digi products!

AccelePort® RAS



No other card is more accepted

Integrated Modem Adapters for High-Speed Analog Connections

As the communication needs of businesses grow, so does the need for dial-in and dial-out services for the users. Standard open-systems PC servers equipped with Digi's AccelePort RAS adapters take on unified communications tasks for businesses of all sizes by efficiently handling remote communications and performing as Internet and fax gateways for dial-in users. Digi's AccelePort RAS adapters provide the widest compatibility and most powerful performance available in a PCI slot. For demanding, server-based applications including modem pooling, remote access, advanced fax, World Wide Web and branch office gateways, you won't find a better product line than Digi's AccelePort.

- Support for speeds up to 56Kbps/V.90
- 4 or 8 port integrated analog modem card
- Digi PortAssist SNMP Web-based manager-easy configuration and management
- Device Drivers Developers Kit
- Widest range of OS support

Acceleport RAS 8 A8 (85977) **\$3,893**

iomega



Web
Direct

Look here for labels, disk cases, carry cases, Zip Tools...

www.ht.com.au/cat/iomega

Smart Storage Solutions

Zip 250MB USB

Provides high-capacity storage in an easy-to-use format that can go from desktop to laptop quickly and reliably.

Sporting a sleek new design, the Zip 250MB USB drive enables users to access high-capacity storage without the need for larger parallel port or SCSI conversion cables. Backward compatible with 100MB USB media, and has a PCMCIA option that allows you to access data anytime and from anywhere.

Zip 250 USB drive (82633) **\$350**

USB/PC Card (82780) **\$399**



ZipCD



\$425

(82779)

The internal Iomega ZipCD drive reads, writes and rewrites a range of CD formats and, with the proven reliability of the Iomega brand, is perfect for those who need to transport and share important files and presentations on a common CD format. With a capacity of up to 650MB, this drive performs at a speed of 4x record, 4x write and 24x read.



Zip 100MB disk:

(23772) **\$19**

10-pack:

(21889) **\$184**

Zip PCMCIA SCSI

accelerator card

(35145) **\$192**

Zip ISA SCSI Zoom

accelerator card

(21888) **\$54**

Zip drive carry case

(31823) **\$52**

Zip parallel cable

(46305) **\$38**

Zip SCSI cable

(46304) **\$38**

Zip disk labels 20-

pack (48059) **\$4**

Zip 6-disk wallet

(35146) **\$26**

Zip Tools for NT

(35149) **\$32**

Jaz 1GB disk

(24218) **\$170**

3-pack

(32844) **\$496**

Jaz Jet - PCI SCSI

controller

(31591) **\$195**

Jaz PCMCIA SCSI

card

(44744) **\$218**

Jaz cable converter

(46306) **\$27**

Jaz universal power

supply

(35154) **\$58**

Jaz Traveller SCSI

to parallel adapter

(32860) **\$89**

Jaz SCSI cable

50HD to 25HD

(46311) **\$68**

Call or see Web

Direct Link for more!

iomega Soak up the Sun

Purchase any Iomega Drive between 1 November and 31 December 1999, call 1300 360 947 to receive your FANTASTIC FREE Beach Chamois, AND go in the draw for a trip for two to Hayman Island for 7 days. See back of Wobbler or call Harris Technology for conditions of entry.



Jaz 2GB External



\$645

(78941)

The external Jaz 2GB drive is faster than many hard drives, has a full 2GB of storage space in each removable disk, gives you the freedom to take your files with you, and is backward compatible with industry standard Jaz 1GB disks. Does not include Jaz disk.

Jaz 2GB disk single (61652) **\$196**

Jaz 2GB disks 3-pack (57271) **\$519**

Click! PC Card Drive



Integrated, high-capacity removable solution for notebook users. Sleek and compact drive, fits into most notebooks. Store, protect and share important information on a 40MB Click! disk.

Click! disks 2-pack (75984) **\$59**

Click! disks 10-pack (75985) **\$170**

Click! Drive



Go anywhere storage for digital cameras and mobile computers. This 6 oz. battery-operated handheld drive slips nice and easy into your pocket when you are on the go. Each 2" square Click! disk holds 40MB of re-writable, removable storage for your mobile stuff.

Click! Drive Mobile (76743) **\$539**

Click! Battery (83737) **\$120**

Click! Power Supply (78925) **\$30**

Zip 250MB

Portable, light, easy to use and holds more files than ever before! Backwards compatible with 100MB Zip disks. Comes with 1 Zip 250MB disk. Iomega tools supplied on CD.

Parallel (74450) **\$289**

SCSI (74451) **\$289**

Disk Single (74454) **\$35**

Disk 10-pack (74452) **\$319**

Zip USB

Now USB enabled PC users running Windows 98 can connect the sleek, translucent blue USB Zip drive, and reap the benefits of simple connectivity and unlimited storage capacity. Once the IomegaWare software has been loaded, remove and swap this drive with other USB devices without rebooting your PC.

(71103) **\$245**

Zip Starter Kit

Get started with the Zip Starter Kit! This parallel port Zip drive comes with four fun and practical, coloured 100MB Zip disks that are ideal for colour coding all of your computer stuff in the office, at home, at school, or anywhere.

(70623) **\$249**

Buz

The easiest way to get multimedia from camcorders, DVD, CD-ROMs, VCRs and laserdiscs into your PC! It's a video capture and editing board combined with an Ultra SCSI controller that lets you capture multimedia into a PC, edit it using the easiest software around, and share it using Jaz or Zip disks, VCR tapes or the Internet.

(78664) **\$339**

Sales 1300 13 9999

Fax 1300 13 6666

Website www.ht.com.au

E-mail sales@ht.com.au

Collect Fly Buys when buying Hardware or Software from HT

Fly Buys

When you work ...

TrackMan
Marble
Wheel
(20529)

\$109



TrackMan
Live
Wireless PC
Controller
(77753)

\$239



Special \$10
rebate on
Cordless Wheel
Mouse -
on-box return
coupon or
download it
from the
Logitech
website.
Customers will
receive a \$10
rebate* by
cheque directly
from Logitech.

*Valid until 31/12/1999

Decorative

Page
30

Internet Keyboard with iTouch

The Logitech Internet Keyboard and iTouch™ software put one-touch Internet and multimedia control at your fingertips. Start typing right away with a familiar, comfortable key layout. Responsive keys provide an exceptional touch. Relax your hands on the attractive palm rest during breaks and easily remove it for extra space.

3-yr warranty.



(60332)

\$59

Cordless Desktop iTouch

A cordless keyboard and cordless wheel mouse combination to free you from cords that tangle. No pointing at the computer or clear path required. With convenient iTouch Internet and multimedia control, access the Internet,

search, open e-mail, play CDs, DVDs or MP3s and more with one touch of a key. 5-year warranty.



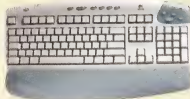
(82772)

\$169

iTouch Keyboard with USB Hub

The Logitech iTouch keyboard lets you control multimedia, access the Internet, search, open e-mail and more with one touch of a key. Start typing right away with a familiar, comfortable key layout and

responsive keys that provide an exceptional touch. Plug additional peripherals into the 2 built-in USB ports. 5-year warranty.



(84807)

\$86

Cordless Wheel Mouse

Fast scrolling in Windows 98, 95, NT. Cordless freedom through digital radio technology for unmatched performance. Comfortable for right and left hands.

- Digital radio technology for maximum reliability
- Scroll in Windows 98, 95, NT applications
- Innovative scroll wheel is also a third mouse button
- Comfortable rounded shape fits right and left hands



(77761)

\$99

Cordless Mouseman Wheel

Cordless MouseMan Wheel gives cordless freedom with enhanced comfort and performance.

- Sleek shape with unique soft-touch sides and cordless freedom of movement, works without being pointed at the computer
- Provides easy scrolling in Windows and on the Web, and the added convenience of a fourth mouse button - includes Logitech MouseWare software to customise the buttons with timesaving shortcuts



(78677)

\$119

Soundman X1 Speakers

Experience the full richness of CDs MP3 and multimedia. Innovative compact design delivers realistic, high definition sound for PC's, portable CD players and TV. High definition sound with solid bass - 25 Watts RMS.

- Excellent for CD music, Internet and MP3 audio
- 3 year product warranty



(81655)

\$135

QuickCam™ Express Camera

Snap stills. Shoot video. Email them anywhere in one click. Or make live video calls! QuickCam™ Express - The simple way to get closer.*

- Capture stills and video instantly
- Email images in a single click
- Meet face-to-face online
- Over 1 million QuickCams sold
- USB connector for easy installation
- Works with Windows® 95 or 98



(80121)

\$99

Soundman X2 Speakers

Two compact "Midnight Grey" coloured speakers and a subwoofer. Clear, crisp sound through patented LIMAD (Linear Magnetic Drive) technology.

- Total output power of 40 watts RMS @ <10% THD
- Frequency response between 30Hz & 20KHz
- Automatic on/off sound detection
- Volume & bass controls
- Integrated power supply
- Headphone jack



(84808)

\$190

... and when you play!

Logitech GameCam

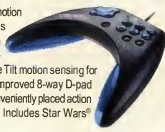
Logitech GameCam lets players see themselves on the computer monitor as they interact with PC-generated opponents and objects like basketballs or volleyballs inside a variety of virtual environments while using their own gestures to control play. Includes QuickCam USB camera



\$260 (84810)

Wingman® GamePad Extreme™

Feel free to win with the ultimate motion sensing gamepad. Delivers precise proportional control with engaging G-Force Tilt™ technology. • Ultra accurate G-Force Tilt motion sensing for superior proportional control • Improved 8-way D-pad for fast digital movement • Ten conveniently placed action buttons for superior firepower • Includes Star Wars® Rogue Squadron 3Elite Mission



\$87 (78674)

Wingman® Formula Steering Wheel

The realistic wheel for gamers who love driving and racing!

New Ferrari yellow wheel, sculpted with rubber grip for comfort & control
• Precise and smooth steering • 2 shifters, 4 buttons on the wheel • Gas and brake pedals on stable base • USB/game port combo



(81506)
\$182

Wingman® Force Joystick

Gain realism and lose those sloppy, jerky gears with the world's only immediate forcefeedback precision joystick. Push the stick that pushes back! Exclusive I-FORCE® technology creates a killer force feedback experience • High torque motors drive the stick with no gears, slop or jerkiness • Combat equipped with 8-way hat switch, 9 buttons and more • Direct X compatible • USB & Serial



(69367) **\$178**

Wingman® Extreme™ Digital 3D

Designed to handle the games of the new century!
• Twist handle for precise rudder control • Versatile grip handle for flexible hand comfort and control
• 7 programmable buttons, all within easy reach • High-precision throttle for accurate power settings • Select USB or game port connection



(81507) **\$79**

Dexxa Steering Wheel

Dexxa® Steering wheel with foot pedals offers extraordinary new levels of control, speed and realism to PC-based computer racing games. With 220 degrees of wheel movement, quick response thumb control buttons and a powerful gear shift lever, you'll be smoking your way through the top racing games.



(69977) **\$93**

Wingman® Attack

Entry-level joystick with new, modern design for more performance. WingMan® Attack™ provides versatile grip handle with three action buttons, a rapid-fire trigger and unique Thumb Sweep design for quick button access. A high-precision throttle is mounted on the stable base and provides smooth and accurate power settings.



(81510) **\$45**

Wingman® Formula Force

Nothing's closer to a race car. Immediate-feedback I-Force technology lets you feel the road and everything that happens, and out your reaction time. Gas and brake pedals feel realistic for fast driving. Use wheel-mounted paddle shifters for fast gear changes, or as programmable buttons for driving in automatic. 1-year warranty



(69366) **\$269**



Soundman G1
Speakers
(81656)
\$79



Dexxa Joystick
USB
(84809)
\$34



Wingman
Gaming
Mouse
(76693)
\$78

Check the Web
Direct Link for
the latest
pricing and
availability

Specialists in Sound and Storage

Yamaha CD-RW kits

**2x write
2x rewrite
16x read**

IMAGE 2216EVK

Yamaha at breakthrough prices!!


 Packed in Australia, with full Yamaha Australian warranty. Complete with manual, cables, Adaptec software (Easy CD Creator and PacketCD), CDR and CDR-W disks and screws. 1MB buffer.
Internal E-IDE (81333)
\$359
**4x write
4x rewrite
16x read**

YAMAHA 4416EVK / SVK

TAKE YOUR PICK, SCSI OR E-IDE!!

With Adaptec Easy CD Creator and PacketCD software, CDR and CDR-W discs, cables, screws and manual.

SVK - Internal SCSI, SCSI card not included (81335)

\$489
EVK - Internal E-IDE (81334)
\$489
**6x write
4x rewrite
16x read**

YAMAHA 6416SVK

6x recording with CDR, and 4x recording with a CDR-W disc! With Adaptec Easy CD Creator and PacketCD software, CDR and CDR-W discs, cables, screws & manual. 2MB buffer.


**Internal SCSI,
SCSI card not included (81336)**
\$590
**6x write
4x rewrite
16x read**

YAMAHA CRW6416SXVK

Adaptec Easy CD Creator and PacketCD software, CDR and CDR-W discs, cables and screws and manual. Original Yamaha external with Yamaha's own regulated power supply. 2MB buffer.


**External SCSI,
SCSI card not included (81337)**
\$726

Yamaha PC speakers

YAMAHA YSTM8B

Compact speaker boxes with dual inputs, head-phone socket and audio output for a subwoofer. Frequency response 80Hz-20kHz. Black (81340):


\$73

YAMAHA YSTM35D

30 Watt speaker system with sub-woofer, with USB or analog connection. (86031) White


\$199

YAMAHA YSTM100

Bookshelf speakers. Wooden cabinets, two way sound. Ymersion surround effect. 40 Watts RMS; provides hi-fi sound. White (81342):


\$232

Yamaha audio quality makes such a difference to your desktop!


YSTM model:
 Part Number:
 Description:

8
 (81339) White
 Full range powered monitor speaker pair

S30
 (86029)
 3-piece Satellite / sub system

S35D
 (86031)
 3-piece Satellite / sub system

S100
 (81342) White
 Bookshelf PC speaker pair

S55D
 (81345) White
 3-pce powered multimedia speaker/subw. kit

SW8
 (81348) White
 Powered subwoofer

SW10
 (81350)
 Powered subwoofer

 Watts:
 Features:

 2x5w
 Astonishingly deep bass response

 30w
 Great sound

 2x6w, 18w subw
 Great sound
 USB

 2x20w
 Non-resonant wood fiber

 80w, 40w subw
 USB, Satellite speakers

 15w
 Universal compatibility

 25w
 Incredible audio depth, auto on/off

\$95
\$139
\$172
\$232
\$280
\$125
\$176

Also available in:

(81340) Black

(86030) Black

(86032) Black

(81343) Black

(81346) Black

(81349) Black

(81349) Black

\$73
\$139
\$172
\$232
\$280
\$125
\$176
Fly Buys.

Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See back page.

December

 Page
32

RICOH

Pricing might
change after
going to print so
please check here

Web
Direct

www.ht.com.au/cat/ricoh

Fly Buys

High performance CD-R/RW drives

RICOH **ATAPI** Internal CD-R/RW Drive MP7060A



Write
CD-R

x6

Rewrite
CD-RW

x4

Read

x24

(79218)

\$599

- Ricoh's MP7060 Series CD-R/RW drives feature: Up to 6x recording speed, up to 4x rewriting speed and up to 24x reading speed
- Designed to achieve accurate reading of audio data for high-quality music reproduction
- Strong dust resistance for greater reliability
- Average access time 120msec

- Comes with Easy CD Creator, the professional-level mastering software, and DirectCD 2.5, the software that makes it easy to write files
- Disc At Once, Session At Once (requires additional software), Track At Once, PacketWrite
- Includes one CD-R disc and one DirectCD-formatted CD-RW disc
- 2MB buffer memory

RICOH **SCSI** Internal CD-R/RW Drive MP7060S



Write
CD-R

x6

Rewrite
CD-RW

x4

Read

x24

(79412)

\$685

RICOH

Media

CD-R
Discs



Gold: (54770)

\$4

Silver: (81167)

\$3

Silver 5-pack:
(81165)

\$16

CD-RW
Discs

(55094)

\$28

CD-RW
DirectCD
Formatted



4x

(74418)

\$17

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**See Page 2
for Locations**

Page
33

Verbatim

Fly Buys.

Harris Technology now offer Fly Buys. Collect Fly Buys points on Computer Hardware and Software.

Web Direct

www.ht.com.au/cat/verbatim

More from Verbatim Internet Mouse



Scroll & side button features. Browse the Web or documents without moving the mouse. Supports Office 97 and Internet Explorer. PS-2 connector and serial port adapter. For MS-DOS 3.3, Win3.1/3.11, 95 & NT. (77817)

\$28

Multi-media speakers



Huge 180w PMPO sound. 3D-sound, magnetically shielded. (79567)

\$48

*Scala MM200 is software for creating presentations that move and look as finished as TV - with animations, videos, sound, music, and effects like wipes and fly-ins.

December

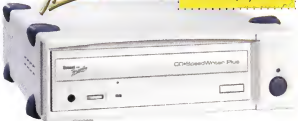
Page **34**

CD-R/CD-RW: Storage for life

SpeedWriter Plus

Smart and Friendly

Bonus software worth \$1,400!



4x Write, 2x ReWrite, 24x Read

CD-R/CD-RW. 4x Write, 2x ReWrite, 24x Read with a plentiful 2MB buffer. Can create a full 650MB CD in as little as 17 minutes! Included: Adaptec Easy CD Creator Standard, PowerQuest Drive Image, Diamond Cut Enhance/CDR, Sonic Foundry CD Architect, Sonic Foundry Sound Forge XP, MediaPath MediaAgent, ECI Disc Inspector Pro, Smart and Friendly CD Consultant.

External SCSI: (78955)

Also available in Internal IDE:

\$420



\$764



CD Pocket RW

Smart and Friendly



Bonus software worth \$1,620 + Scala MM200* worth \$399!

4x Write, 4x ReWrite, 20x Read

Add a CD Recorder to your Laptop!

The Smart and Friendly CD Pocket RW from Verbatim is a truly portable 4x Write, 4x ReWrite, 20x Read CD-Recorder with a plentiful 2MB buffer. Weighing approx 500gms, the CD Pocket RW is designed specifically for mobile professionals. The integrated rechargeable battery pack will write approximately 6 CD's at 4x before requiring recharging. Includes an extensive software suite of today's most popular applications, and a Plug-and-Play PCMCIA host adapter.

(xxxxx)

NEW !! \$1,399

CD-RW

DataLifePlus® ReWritable blank disc. Extra durable printable surface. 2x/4x speed. 650MB.

Single (77492)

\$13

CD-R

DataLifePlus® Writable blank disc. Extra durable printable surface. 74 Min. 650MB.

Single (74740)

\$3

10-Pack (76731)

\$26

Verbatim 20x PCMCIA Portable CD-ROM Drive

The low profile slim-line tray design of this external CD-ROM Drive makes it ideal for mobile applications. Its built in PCMCIA interface allows any Windows based laptop or notebook to access large volumes of CD-ROM data with ease.

(75386)



\$290

DVD version also available

Verbatim 56K CompactModem

Compatible with Windows® CE based Palm PCs and Handheld PCs



The Pretec CompactModem from Verbatim is the world's first and smallest 56kbps Fax/Modem card for Windows CE based Palm PC and Handheld PC. Video conferencing ready. Supports V.80 application for synchronous H.324 streaming. Supports V.90 and K56flex. Win 95/98/NT/CE compatible. By connecting the CompactFlash adapter included, this modem also becomes a fully-fledged PC card able to be used with most laptops/notebooks.

(83607)

\$292

HARRIS TECHNOLOGY™

Pricing** and specifications herein are subject to change without notice



Several finance methods available, subject to approval

Compact Flash Memory



Introducing Fly Buys at Harris Technology. See back page.

- Combination of a memory module with a Hard Disk
- Provides a durable, compact, solid state storage card.
- Smart voltage feature. (3.3-5 Volts)

	Part #	\$	Fly Buys.
16Mb ATA Flash Card	(70963)	\$180	✓
32Mb ATA Flash Card	(70965)	\$297	✓
64Mb ATA Flash Card	(70968)	\$472	✓
12Mb Compact Flash Card	(70950)	\$169	✓
16Mb Compact Flash Card	(70951)	\$179	✓
24Mb Compact Flash Card	(70953)	\$259	✓
32Mb Compact Flash Card	(70954)	\$289	✓
48Mb Compact Flash Card	(80242)	\$349	✓
Compact Flash Adapter	(86000)	\$23	✓
16Mb Smart Media Card	(86191)	\$159	✓
32Mb Smart Media Card	(86193)	\$319	✓

Fly Buys.

PC Cards



These multi-functional cards satisfy the need for today's mobile computer users to hook up to their corporate and home networks. Portable compact sizes are a fantastic feature of the Kingmax PC Card range of products, making them easy to carry as they weigh less. Plug and Play anywhere, and provide high speed Internet and Intranet access. They comply to the common standards, and run on minimum power standards for power conservation. These cards are high performance products with standard-based technologies.

V.90 Type II Modem	(86004)	\$156
10BaseT Ethernet Type II 16 bit	(85991)	\$79
10/100Base Ethernet CardBus 32bit	(85992)	\$165
10/100Base Ethernet Type II 16Bit	(85993)	\$139

Collect Fly Buys points on ALL items purchased from HT!

USB Modem, Lucent chip 100% hardware (86005) **\$179**

PC-133 TinyBGA™ DRAM module, more powerful than previous modules, has amazing functionality

Networking



NEW PRODUCT

NEW PRODUCT

- Dual-speed Ethernet Smart Switches
- Performance and functionality in entry-level switching.
- Offer high level flexibility and functionality in virtual grouping.
- Rich bandwidth and long distance connection.

5 Port 10/100 Dual Speed Hub Stckble	(85988)	\$229
8 Port 10/100 Dual Speed Hub non Stck	(85989)	\$297
16 Port 10/100 Dual Speed Hub Stack	(86007)	\$559
24 Port 10/100 Dual Speed Hub Stack	(86008)	\$829
16 Port Smart Group Switch Virtual LAN	(86009)	\$1049
24 Port Smart Group Switch Virtual LAN	(86010)	\$1429
10/100 PCI Ethernet Card	(85990)	\$30

Sales 1300 13 9999
Fax 1300 13 6666

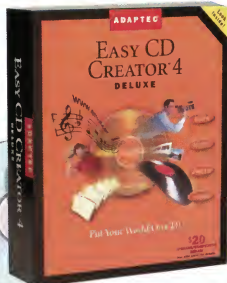
Website www.ht.com.au
E-mail sales@ht.com.au

Do you want Fly Buys with that?

We move the information that moves your world


Fly Buys.

Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See back page.



Easy CD Creator™ 4 Deluxe

for Windows® 95, 98 and NT 4.0

Put Your World on CD!

Easy CD Creator 4 Deluxe goes way beyond the software that came with your CD-Recorder.

- Easily create data, audio and multimedia CDs on your PC
- Download Internet music, including MP3 tracks, and record to your own CDs
- Back up important files such as spreadsheets and financial data
- Make your own CD labels, covers and inserts
- Create custom music CDs to play in any standard CD
- Send video postcards, share photo albums on CDs that play on any PC - no special software required

(80691)

\$127

SCSI Card 2940U2W

PCI-to-Ultra2 SCSI Host Adapter

Unleash the full potential of your server or workstation!


Y2K

compliant

(83687)

\$628

When it comes to boosting the performance of servers and workstations to 80 MByte/sec, Ultra2 SCSI (LVD) from Adaptec is leading the way. So unleashing the full potential of an Ultra2 SCSI solution, with high-performance hard drives and faster processors, is easier than ever. Ultra2 SCSI assures you get maximum performance from both your system and peripherals.

- Faster data access rates up to 80 MByte/sec
- Greater configuration flexibility and scalability with 12 meters of cable
- Operating System Support - Windows NT™ 4.0 & 5.0, Windows® 95, NetWare 3.1X & 4.X, SCO UnixWare 2.1.2, OS/2 Warp 3 & 4, and SCO Unix 3.2v4.2

SCSI Card 2930 Ultra

PCI card for desktop PCs

Boost your CD-Recordable or Jaz drive to its best performance!


Y2K

compliant

(83689)

\$199

Ideal for SCSI CD-R, CD-RW (rewritable CD-ROMs), DVD, or removable drives.

- Gain Ultra SCSI speed: 20 MB/sec data transfer rate
- Save time with multitasking
- Achieve broadest compatibility
- Connect up to 7 SCSI peripherals with one card
- Manage peripherals with Adaptec® EZ-SCSI® software (Included)
- Operating System Support - Windows NT®, Windows® 95/98, Windows® 3.1, DOS

Pricing might change after going to print, so please call for the latest pricing or visit the Web Direct Link. And why not register on-line for even better pricing?

December

 Page
36
**HARRIS
TECHNOLOGY™**

Pricing** and specifications herein are subject to change without notice



Several finance methods available, subject to approval



For all your Data Storage

Travan Backup Kits

4/8GB Internal IDE



STT28000A-RFT
(27274)

\$434

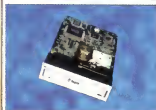
4/8GB Internal SCSI



STT28000N-RFT
(56140)

\$482

10/20GB Internal IDE



light blue bg

STT22000A-RFT
(76253)

\$650

12/24GB SCSI DDS-3



Internal
Seagate DAT Backup Drive:
STD22400N/SB
(56150)

\$1,920

Hard Drive Upgrade Kits



What's in the Box?

5,400 - RPM MEDALIST drives bring multimedia performance and high capacities at an exceptional value.

- ◆ Seagate Ultra ATA Hard Drive
- ◆ Frame kit, mounting, brackets and drive screws
- ◆ Antistatic wrist strap
- ◆ Multimedia-Ready for full-screen, full-motion video playback and MMX
- ◆ ATA transfer rates up to 66.6 Mb per second with Ultra ATA
- ◆ Seek times as fast as 11 msec
- ◆ Designed for Pentium PC's
- ◆ 3 Year Warranty

Collect Fly Buys Points on all Computer Hardware & Software purchased from Harris Technology Page 64 for details.



ST34311A-R

4.3GB

\$249

(83125)



ST313032A-R

13.2GB

PRICE DROP

\$380

(76896)



ST38421A-R

8.4GB

\$336

(86054)



ST317242A-R

17.2GB

\$425

(76897)

3M

Fly Buys.

Collect Fly Buys points on Hardware and Software when buying from Harris Technology!

Web Direct

www.ht.com.au/cat/3m

For Clear Pictures and Quality Sound

Other 3M Filters

AF100L for 12-15" Monitors
\$64
(81355)

AF100XL for 16-18" Monitors
\$115
(81311)

Scotch™ CD Essentials

Scotch™ Laser Lens Cleaner for CD and CD ROM Player AV-101

- Best results of any CD Laser Lens cleaner tested, optimises sound
- On disc recording guides you
- Cleans all CD format hardware

(85918) **\$34**

Scotch™ CD and CD-Rom Clean Wipes and Spray Cleaner AV-115

- Easy to use cleaner removes oily fingerprints, dust and dirt
- Helps prevent skipping and mistracking

(85919) **\$22**

Scotch™ CD and CD-Rom Surface Scratch Remover Kit AV-116

- Helps stop skipping and sound drop out caused by minor scratches on CD's or CD-ROMS
- Polishes CD's and CD-ROMs to help repel dust

(85920) **\$36**



Notebook Privacy Filters

From the side a passerby can only see a blank dark screen. 3M's patented microcover technology makes notebook on-screen data visible only to you when sitting directly in front of your notebook. Plus it stays in place even when your notebook is closed and is easy to attach and remove. Three sizes - (12.1" - 13.3" and 14.1")

More privacy: **New! Keep secrets SECRET! from \$119**

Won't blur or distort images
Purchase a 3M Privacy Notebook Filter and (86119) receive a Post-It® and Scotch™ Personal Organiser Accessories. Perfect for the mobile office on the go!

(86120) 13.3" - **\$129** (86121) 14.1" - **\$139**



Complete and return this coupon to 3M with a barcode from your 3M Computer Filter and receive a free Post-It® and Scotch™ Personal Organiser Accessories.

Name: _____

Company: _____

Postal Address: _____

State: _____ P/Code: _____ Email: _____

Mail to: 3M Optical Systems Division, 950 Pacific Highway
Pymble NSW 2073

Free!

matrox

(For the latest info & pricing see this WebLink address!)

Web Direct

www.ht.com.au/cat/matrox

NEW G400 Graphics Accelerators

DRAMATICALLY DIFFERENT High Performance Graphics

Editors' Choice

Matrox Millennium G400 has received the Editors' Choice Award from APC, PC Authority, PC Magazine August and September 1999



Matrox Millennium G400

G400 Dual Head 32MB RAM

(78103) **\$415**

G400 Dual Head 16MB RAM

(78105) **\$329**

G400 Max Dual Head 32MB RAM

(78106) **\$485**

The G400 series is the next generation of graphics acceleration cards from Matrox. The G400 enables Matrox to offer superb games performance as well as the speed, image quality and multimedia ability that has made Matrox the choice of demanding PC users. The G400 is an extremely fast graphics accelerator with the MAX version in the series offering even faster performance and a 360 MHz DAC for ultra crisp display at high resolutions. **G400 - Extreme Speed Plus:**

- Environment mapped bump mapping - a sensational 3D feature. Only card to support this!
- DualHead models runs x2 monitors from the one G400 card
- Amazing! Look at www.matrox.com/g400/applications/dual/home.htm for many interesting uses
- Stunning on screen visual quality
- Offers excellent DVD and TV out ability
- Upgradable to video capture & video editing (TV, VCR, PC output)

NEW!

December
Page
38

HARRIS TECHNOLOGY™

Pricing** and specifications herein are subject to change without notice



Cheques OK with 2 x valid ID or T/T. Call for details.

DVD & Storage solutions for everyone



Only the finest manufacturers have been selected for these premium quality products. Designed with the ultimate hardware and software for trouble free performance, the DVD and Storage Solutions are simple to install and easy to use.



PRO-KIT CD Mirror Server

The PRO-KIT Tower 2 is the latest breakthrough in CD/DVD networking and Network Attached Storage technology.

Access up to 44 full CD's
across a 10/100 network!

Features:

- Store up to 44 "full" CD images at one time
- Full support for both CD and DVD media formats
- Advanced high-speed CPU architecture delivers up to 7Mbytes/sec (on 100 Mbit network)
- Neat and compact - No bulky CD-ROM stacks



(86053)

\$4,235

PRO-KIT SCSI 8x20 CDR Kit

- Internal Panasonic Drive
- AdvanSys PCI SCSI Controller card
- Adaptec Easy CD Creator Software
- 2 blank media
- Audio and data cables
- Quick Installation Guide

EXTERNAL KIT ONLY:

- Sturdy self-contained external enclosure for recording stability



NEW

Internal Kit:
(79007)

\$645

External Kit:
(79008)

\$779

20x Read
8x Write!!

HITACHI

DVD RAM

FOR MASSIVE DATA STORAGE

DVD RAM gives you massive storage capabilities. Great for storing large amounts of documents, images and archiving records. Hitachi are the leaders in DVD RAM.

- Internal SCSI DVD drive
- Massive data storage: 5.2GB per media, re-writable
- Backwards compatible
- Reliable storage method
- Includes 1 blank DVD RAM media
- Includes archiving software

(58069)



\$1,099



MAXELL DVD RAM MEDIA

- 5.2GB double sided DVD RAM media
- Re-writable up to 100,000+ times

(75383)

\$134

PRO-KIT

Hardware Decoder

FOR UPGRADING PC'S

- Pioneer DVD-ROM Drive (32x CD-ROM)
- Microsoft Encarta 99 DVD Reference Suite
- PCI MPEG-II decoder card
- Audio and data cables
- Quick Installation Guide



NEW

(79009)

\$475

Now
with MS
Encarta 99
DVD !!

Media



Princo
Blank
CD-R

74 minutes

(74357)

\$3



Princo
Blank
CD-R

80 minutes
for full audio
duplication

(73157)

\$3



Princo
Blank
CD-RW

74 minutes
rewritable

(74397)

\$7



**HEWLETT
PACKARD**

Expanding Possibilities

Fly Buys.

Introducing Fly Buys at
Harris Technology!
See back page
for details.

**Web
Direct**

www.ht.com.au/cat/hp

Hurry to
take
advantage
of the
**FREE HP
Warranty
Upgrade!**

HP offers an
upgrade
warranty from
the standard 1
year warranty
to 3 year
warranty on the
LaserJet 2100
Series, LaserJet
4050 Series and
LaserJet 8100
Series, when
you purchase
one of these
printers between
01/09/1999 and
31/12/1999.
Call for details.

HP Laser Printers

See www.ht.com.au/cat/hp
for toners, inks, papers etc.

HP LaserJet 1100 Printer

HP's JetPath technology allows
you the flexibility to
expand the LJ 1100 into
an all-in-one performer
when your business
needs grow. Crisp, sharp
600dpi laser printing.
8ppm. 2MB RAM.

(70095) **\$789**



HP LaserJet 1100A Printer-Copier- Scanner

If your current business needs
require the LaserJet 1100 with
copying & scanning capabilities,
move up to the LaserJet 1100A.

Printing, copying and scanning: all-in-one. Make
laser copies at the touch of a button, even without
the PC turned on. Scan resolution 600dpi enhanced,
300dpi optical.

(70096) **\$925**

HP LaserJet 2100 Series

All models feature:

- 1200dpi resolution
- 10ppm print speed
- 60MHz processor
- 350-sheet capacity
- 15,000 page monthly
duty cycle
- Excellent performance

LaserJet 2100 A fast flexible laser
with room to grow. EIO, PCL 6,
4MB RAM.

(72291)

\$1,345

LaserJet 2100M A fast flexible
laser with PS and PCL. EIO, PCL
6, 8MB RAM.

(72292)

\$1,620

LaserJet 2100TN A complete
network printer. EIO, PCL 6, 8MB
RAM, additional 250-sheet feeder,
HP JetDirect print server installed.

(72293)

\$1,910



HP LaserJet 5000

Prints A3, 16
ppm, 100MHz,
1200dpi, 4MB
From (60548)

\$2,749



HP LaserJet 8000

Print/duplex
A3, 24ppm,
133MHz,
1200dpi, 16MB
From (60551)

\$4,578



HP 2000 Series



Business performance with break-
through colour print speed. Black:
600dpi, 10 ppm. Colour: PhotoREt II,
4ppm. Low printing costs. Four
individually replaceable ink cartridges.
Outstanding print quality. 5,000 pages
monthly duty cycle. 2MB RAM.

2000C Excellent colour print
quality for a great price!

(69484) **\$929**

2000CN Network ready,
additional 250 sheet paper tray

(69485) **\$1,649**

HP Professional Colour InkJet Printers



HP 2500 Series

Fast, brilliant colour printing for the
workgroup. **A3 capable.** Black:
600dpi, 9ppm. Colour: 3.5ppm.
Rugged and robust. Low cost per
page. 4 individually replaceable ink
cartridges. Versatile media handling.
12,000 pages monthly duty cycle.

2500C Adobe PostScript 3
optional, 4MB RAM (70725)

\$2,045

2500CM Network ready, Adobe
PostScript 3 standard, 20MB RAM

(76060) **\$2,998**

HP Colour LaserJet 4500 Series

Delivers high quality 600dpi
colour graphics. 16ppm mono,
4ppm colour. 32MB RAM.
133MHz processor. First page
out in 26sec for black text and
36 seconds for full colour. 900
pages paper input. Superior
network management. Double-
sided printing. Automatic
overhead transparencies
sensing. Exceptional reliability.
Cost-effective. Improved paper
handling. From:



**Stunning
print
quality!**

(70356)

\$5,340

**HARRIS
TECHNOLOGY™**

Pricing** and specifications herein are subject to change without notice



Several finance methods
available, subject to approval

Business Laser Printing

Phaser 740 Laser Printer



740L Colour-Capable Laser Printer

Should I get a black & white or colour printer? Yes.

740L: Incredibly affordable high-performance black & white laser printer, colour capable. Step up to colour by simply adding the Colour Upgrade Kit.

Never Say Never...

740: Affordable colour laser printer with extraordinary print quality. For breathtaking images that leap off the page, at a breakthrough colour laser price, look to the Phaser 740. That way, you'll never have to compromise.

Model	740L (71835)	740 (71836)
Full colour printing	add colour kit	standard
Max resolution black/colour	1200dpi -	1200dpi/600dpi
Ram Standard/Max	16MB/256MB	32MB/256MB
Image processor	133MHz	133MHz
Print speed black/colour	16ppm -	16ppm/5ppm
Pipeline printing	optional	optional
Duplex	manual auto	standard optional
	\$3,678	\$4,714

Both printers feature: 10BaseT for network-ready printing right out of the box • No developers or other special components that need regular service • Adobe Postscript 3

For Phaser

740:

Black toner
(6,000 pg)
(71854)

\$197



C,M or Y toner
(71855,
71856, 71857)

\$386

For Phaser

840:

Colour Ink
Sticks (C,M or
Y) 2-pack
(71872,
71873, 71874)

\$179



5-pack
(71869,
71870, 71871)

\$399

Paper Tray
(71905)

\$234

For Phaser

740, 840

Compatible:



16MB Memory
(71844)

\$160

32MB Memory
(71845)

\$207

64MB Memory
(71846)

\$708

Discount
Page
41

Phaser 840 Colour Printer

The Phaser 840 solid-ink colour laser printer is a winning combination of easy to use, cost-effective colour printing, quality, and staggering colour print speeds.

Set up is a breeze with its "plug-and-print" right-out-of-the-box design.

And... **free black ink** means you can add colour to documents and still keep the same low cost-per-page as a monochrome laser printer. Colour is now affordable!



Model	840N (71839)	840DP (71840)	840DX (71841)
Resolution	1000dpi	1200dpi	1200dpi
RAM Standard/Max	32MB/128MB	64MB/128 MB	128MB/128MB
Built-in Hard Disk	Optional	Optional	2GB
RISC Processor	133MHz	133MHz	133MHz
Speed High Res/Photo	-	2ppm	2ppm
Pipeline Printing	Optional	Standard	Standard
Job Accounting	50 Jobs	500 Jobs	5,000 Jobs
Duplex Built-in Auto	Optional	Standard	Standard
Paper Tray 200-sh	Standard	Standard	Standard
Tray 500-sh each (2)	Optional	Optional	Standard (one)
	\$5,733	\$7,285	\$9,780

Visit the Web Direct Link for the latest pricing, availability and information on Tektronix products. And why not register on-line for even better pricing?

Also available: Tektronix
A3 colour lasers!

Great value from only
\$10,970 (23071)

Printers that mean Business

Sharp colour ... Sharper prices ...

Why pay more than you have to when QMS gives you desktop colour laser printing from only **\$2,995** (83652)

MagiColor 2 DeskLaser



16ppm
mono

4 ppm
colour

Standard
Ethernet



\$2,995

(83652)

MagiColor 2 DeskLaser with Duplex



16ppm
mono

4 ppm
colour

Standard
Ethernet

Duplexing
unit

\$5,695

(83653)

Why QMS?

The Magicolor range from QMS comprises nine different models incorporating features such as oversized-A3, PostScript, and auto duplexing. Within the Magicolor range there is a printer available to suit your individual needs. The outstanding advantage of the MagiColor 2 DeskLaser range is that you don't need to pay thousands of dollars for costly add-ons that you don't require. The Magicolor 2 DeskLaser range utilises the power of Windows to produce 16 pages per minute in monochrome and 4 pages per minute in colour, prints at 600 x 600 dpi, has 24 MB RAM, ships with ethernet as standard and has the option to automatically duplex. These printers are an ideal investment for emergency/short run brochures, sales proposals, presentation, company reports, letters, etc.

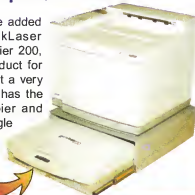
Turn your colour laser into a colour photocopier for only \$840 with the QMS ScanCopier 200 digital copier/scanner



\$840

(83589)

Colour copying capability can be added to the QMS MagiColor 2 DeskLaser printers with the QMS ScanCopier 200, giving users a very flexible product for printing and copying, in colour, at a very affordable price. Its control panel has the familiar look of a normal photocopier and copying is performed at the touch of a single button. The QMS ScanCopier 200's flatbed scanner can be simultaneously connected to a PC, enabling it to operate as a full function digital scanner as well as a digital copier.



Fly Buys
Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. Details on Page 64.

December
Page
42

HARRIS
TECHNOLOGY™

Rent: Short or long term. Several options available. Ask for Christine Dalton.



All prices include sales tax & subject to change w/o notice.

Canon

For "live" pricing and more Canon products look here >

Web
Direct

www.ht.com.au/cat/canon

New Scanner Range Release!

Most compact, lightweight flatbed scanners available!

- Silent & fast scanning
- Super slim & compact
- Plug & Play
- 36-bit
- Fully integrated software package

NEW!



FB-330P Parallel.
Optical resolution
300x600dpi.

(83661) **\$167**

FB-630P Parallel.
Optical resolution
600x1200dpi.

(83673) **\$238**

FB-630U USB to suit Win98/
iMac/Mac G3. 600x1200dpi opt.
res. One-touch scan button.

(83685) **\$238**

New from Canon is this range of stylish flatbed scanners, offering the cutting edge in technology. They are the most compact, lightweight flatbed scanners available on the market today: barely larger than an A4 sheet and only 39mm high, they are sure to fit on any desk. Offering improved resolution and colour recognition, these new scanners come with a complete 'out of the box solution', including a fully integrated and updated software package.

**Canon
BJC-
5000**



**A3
capable**

**1440x
720dpi**

Dual Ink Cartridge system.
High Resolution,
1440x720dpi
printing and 7
colours.

Prints up to A3.

Great for full
bleed A4!

Print speed:
black 7.5ppm,

colour:
2.85ppm.

PhotoRealism®
Technology to
reproduce all
the subtle
nuances of a
picture, right
down to the
very light
shades. Prints
transparencies,
high resolution
paper, T-shirt
transfers etc.,
even prints
banners.

(20756)

\$355



NEW!

Canon LBP800 Personal Laser Beam Printer

Compact desktop laser with face up or down paper delivery, 125 page Multipurpose tray and single sheet Manual Feed Slot. Comprehensive job control via Canon Advanced Printing Technology (CAPT) driver software including Match Paper Size, Multipage per Sheet, Collate, Form Overlay, Customer Paper Size, Toner Saver and Automatic Image Refinement modes.

8ppm • 300x300dpi, 600x600dpi and 2,400dpi with
text and line smoothing • 512K buffer • 2,500 pages per
cartridge (5% cover) • Drivers available: Windows® 95,
98 and NT 4.0.

Great price!

(83787) **\$587**



BJC-265SP (76009) **\$147**

Super performance bubble jet printer. Image optimiser setting reduces jagged edges and faded colours. Super Economy mode: cartridges deliver up to 400 pages in colour, 2400 in black. Up to 4ppm in black, up to 0.3ppm colour. Banner printing capable. Optional black, PhotoRealism and fluorescent cartridges available.



BJC-2000SP (80926) **\$187**

Compact new design for printing ease. Drop-in loading system makes changing cartridges a snap. High-quality photos and text - smooth tonal gradation. 720x360dpi. Optimised gradations for more natural looking images. Smooths jagged edges of low resolution graphics. Instant conversion into a scanner with optional scanner cartridge.



BJC-6000 (79220) **\$475**

High Quality: At 1440 dpi, printouts appear crisp, with razor sharp images and silky smooth tonal gradation. Smooth gradation between dark and light sections. Separate ink tanks: only change the colour you use up. Six colour printing ensures photo quality. 8ppm black, 5ppm colour. Smart Ink Level Detection. Optional USB cable.

Separate
Ink Tanks.
1440dpi.

Decorative
Page
43

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**Do you want
Fly Buys with
that?**

EPSON
THE POWER TO CREATE

Fly Buys.

See
page 64
for details.

**Web
Direct**

Looking for more information?

www.ht.com.au/cat/epson

Makes bright ideas look brilliant

EPSON STYLUS™ COLOR 460 (84928) **\$257**

The perfect introduction to color printing for the home user.

- Affordable, yet versatile 720x720dpi, four colour printer – ideal for the home.
- EPSON's PhotoEnhance 4 technology allows you to analyse digital images and enhance them for the best final output. This means customers can ask the printer driver to enhance the final print image – without affecting the original file.
- Automatic Mode in the printer driver software selection. The colour and print quality is adjusted automatically to achieve optimum results, regardless of what is being printed or the type of paper being used.
- Print photos & cartoons onto t-shirts using EPSON's Iron-On Transfer Paper. Imagine... Customised gifts!
- Poster tiling function. The printer driver divides the image into a number of 'tiles' and prints across multi-pages that join to make a poster. You can choose to print posters using 4, 9 or 16 A4 pages.
- On-Line, animated documentation on CD-ROM with helpful hints.



Cartridges for
EPSON Stylus
Colour
Printers
featured on
this page...

Black Ink for
EPSON
Stylus
460 & 660
\$37
(70948)

Black Ink for
EPSON
Stylus
760 & 860
\$45
(70091)

Colour Ink for
EPSON
Stylus
460, 660,
760 & 860
\$44
(70092)

STYLUS. COLOR 660

\$320

(84929)



- 1440 x 720 dpi
- EPSON's PhotoEnhance 4 technology
- EPSON's Exclusive PerfectPicture imaging system
- Photo quality for home or office
- Watermarking capability

STYLUS. COLOR 760

\$520

(84930)



- 1440 x 720 dpi
- Combines EPSON's Advanced, Variable-Size Droplet Technology and Ultra Micro Dots with EPSON's award winning PicturePerfect imaging system.
- 1440 x 720 even on PLAIN PAPER

STYLUS. COLOR 860

\$645

(84931)



- Targeted for business and professional graphics users wanting maximum colour output combined with speed and affordability.
- 1440 x 720 even on Plain Paper.
- Parallel and USB Ports for easy setup.
- Printouts virtually indistinguishable from a photo.

EPSON Perfection 610

(85785)

\$324



An entry level scanner ideal for the home, SOHO or small business. So easy to use! Press the "Start" button on the scanner and it will launch the application and scan the image.

- 36-bit, 600 x 2400 Optical Resolution - NewSoft Presto! PageManager for one button scanning - Adobe PhotoDeluxe - USB connection for easy setup - EPSON's Micro-Step Drive Technology for maximum hardware resolution - EPSON's Advanced CCD and lens for edge-to-edge sharpness and clarity.

EPSON Perfection 1200

(85784)

\$550



36-bit 1200 x 2400 Optical scanner. Featuring EPSON's ColorTrue Imaging System the Perfection 1200 integrates hardware, optics and processing technologies to give detailed and accurate images.

- Xerox TextBridge Classic OCR Software - Adobe PhotoDeluxe - Adobe PageMill - Create your own web pages - NewSoft Presto! PageManager - EPSON's TWAIN 4 - EPSON's Advanced CCD and lens for edge-to-edge sharpness and clarity. - USB for easy setup.

**HARRIS
TECHNOLOGY™**

Pricing** and specifications herein are subject to change without notice



Several finance methods
available, subject to approval

HP DeskJet Printers and All-In-One Series

NEW!

HP DeskJet 610C

Sharp blacks & rich colours on a budget

Optional Photo Cartridge for photo-quality colour. Easy to use.

(80426)

\$247



NEW!

HP DeskJet 830C

Smudge resistant, fast drying inks

Prints stickers, labels, photo paper, iron-ons, banners etc.

(83456)

\$392



NEW!

HP DeskJet 970Cxi

2400dpi on photo paper!

PhotoREt III for more shades of colour. Automatic two-sided printing.

(84363)

\$780



NEW!



**HP
Colour
Copier
170:**

As affordable as an ordinary black & white copier!

Fast, convenient photo-quality colour and outstanding black & white copies.

Special features: Super-Zoom (24-400%), Clone, Poster, Auto-fit, Reverse (for iron-ons), 2-on-1 (two originals onto one page), 600x600dpi optical black and PhotoREt II colour copying. Up to 99 continuous copies, up to 11cpm mono, 8.5cpm colour.

(84894)

\$940

HP DeskJets	610C	810C	830C	880C	895Cxi	970Cxi	1120C
Speed Black	5ppm	6.5ppm	8ppm	8ppm	10ppm	12ppm	8.5ppm
Speed Colour	2.5ppm	4.5ppm	5ppm	5ppm	6ppm	10ppm	4.5ppm
Resolution Black	600dpi	600dpi	600dpi	600dpi	600dpi	600dpi	600dpi
Resolution Colour	600x300dpi	PhotoREt II	PhotoREt II	PhotoREt II	PhotoREt II	PhotoREt III	PhotoREt II
Monthly Volume	1000	1000 pages	1000 pages	2000 pages	3000 pages	5000 pages	3000 pages
Input Capacity	100 sheets	100 sheets	100 sheets	100 sheets	100 sheets	150 sheets	150 sheets
Envelope Input	20	15	15	15	15	15	15
Network Capable	no	no	no	no	yes	yes	yes
Connectivity	Parallel	Parallel & USB	Parallel & USB	Parallel & USB	Parallel & USB	Parallel & USB	Parallel
Part number	(80426)	(77961)	(83456)	(72920)	(70705)	(84363)	(52998)
Price	\$247	\$345	\$392	\$479	\$633	\$780	\$788

HP OfficeJet T45

(84356)

NEW!

\$975

Prints, copies, scans and faxes - all in colour!



HP OfficeJet R65

(80322)

\$1,640

Prints, copies and scans - all in colour!



HP LaserJet 3100

(58566)

\$1,399

Prints, copies, scans and faxes - mono



HP All-in-Ones	OJ 635	OJ 725	OJ T45	OJ T65	LJ 3100	OJR45	OJR65
Print Speed Black	5ppm	5ppm	9ppm	11ppm	6ppm	11ppm	11ppm
Print Speed Colour	2ppm	2ppm	6.5ppm	8.5ppm	-	8.5ppm	8.5ppm
Print Resolution Black	600dpi	600dpi	600dpi	600dpi	600dpi	600dpi	600dpi
Print Resolution Colour	600x300dpi	600x300dpi	PhotoREt II	PhotoREt II	-	PhotoREt II	PhotoREt II
Fax/PC Fax Memory	65 pages	65 pages	55 pages	75 pages	150 pages	-	-
Fax Speed Dials	100	100	75	100	175	-	-
Maximum Copies	99	99	99	99	99	50	99
Copier Zoom	50-200%	25-400%	50-200%	25-400%	50-200%	25-400%	24-400%
Scan Resolution Enh.	1200dpi	1200dpi	300dpi	300x600dpi	600dpi	960dpi	960dpi
Scan Resolution Opt.	300dpi	300dpi	1200dpi	1200dpi	300dpi	600x2400dpi	600x2400dpi
Scan Bit Depth	24-bit	24-bit	24-bit	24-bit	256 levels grey	30-bit	30-bit
Paper Capacity	100 sheets	150 sheets	100 sheets	100 sheets	100 sheets	100 sheets	100 sheets
Auto Document Feeder	Yes	Yes	Yes	Yes	Yes	No	Yes
Part number	(55544)	(80568)	(84356)	(84893)	(58566)	(80302)	(80322)
Price	\$667	\$795	\$975	\$1,169	\$1,399	\$1,449	\$1,640



More from Agfa

Transparency
adapter for
SnapScan 1236s.
Moving light
source.
203x254mm.
(76779)
\$399

Document Feeder
for DuoScan
T1200. (75581)
\$458

Document Feeder
for SnapScan
1236s (82625)
\$405

Batch Slide holder
set for DuoScan
T1200. (75582)
\$238



DuoScan T1200
SCSI-2. 36 bit.
Transparency
scanning. Opt.
res. 600x1200ppi
(74498)
\$1,315



DuoScan T2500
SCSI-2. 36 bit.
Transparency
scanning. True
opt. res. 1250ppi
(74499)
\$8,185

Call for pricing on
Snapscan 1212p.
DuoScan
T200XL, and
ePhoto 1680.

Making images work for you

SnapScan Touch

Agfa's revolutionary Snap-Scan Touch USB Scanner has four programmable buttons: scan direct to file, email, fax or printer. 600x1200 ppi, 36 bit, landscape desktop scanner. Comes with 7 translucent coloured handles! Software: Agfa ScanWise, Caere OmniPage LE OCR, & more.



(74495)

\$249

SnapScan 1236s

One pass, high quality 600x1200ppi scanner (9600ppi max.) with SCSI-2 interface. 36 bit colour. Includes OmniPage LE OCR, PaperPort, iPhoto Express, Color-It and FotoLook software. Compatible with Win3.x/Win95/98/NT.



(74497)

\$385

SnapScan 1236u

One pass, high quality 600x1200ppi scanner (9600ppi max.) with SCSI-2 interface. 36 bit colour. Comes bundled with Caere OmniPage LE OCR, Caere PageKeeper, Corel PrintHouse Magic Select & Agfa's incredible ScanWise software. Compatible with Win98, USB technology.



(84306)

\$359

SnapScan 1212u

One pass, high quality 600x1200ppi scanner (9600ppi max) with USB interface. Includes Caere OmniPage LE OCR, Caere PageKeeper, Corel PrintHouse Magic Select & Agfa's incredible ScanWise software. Compatible with Win98 & USB Technology.



White:
(74496)

\$258

NEW!

ePhoto 780c

The new metallic blue ePhoto 780c is an exceptionally fast point-and-shoot digital camera. With a resolution of 1024x768 with Agfa's Photo-Genie, this camera is ideal for the home or office. 1.8" colour LCD with optical viewfinder. 2MB SmartMedia card included. 4 flash modes and self timer.



(84305)

\$445

ePhoto CL30

Compact, simple to use, mega-pixel digital camera with USB interface and a resolution of 1440x1080 pixels. 4MB CompactFlash included. Features a 1.8" colour LCD screen, and Auto focus lens with 2x digital zoom and macro. 4 flash modes.



(81626)

\$855

ePhoto CL50

Digital camera with built-in microphone for adding up to 10 seconds of voice or sound per image. Resolution 1600x1200 pixels. 3x optical, 2x digital zoom. Optical viewfinder and 2" LCD screen. Burst mode: hold shutter for continuous shots. The included 8MB card stores up to 96 photos.



(76793)

\$1,635



Blue or Green:
(75577/75578)

\$267

**Now available
in white, blue
and green!**



New smart scanners for sharp results

HP ScanJet 3300C

**Photo scanning, text
recognition, copying**

Scan or copy at the touch of a
button. USB port. Save, print, or
send your scan to your selected
application.

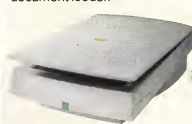
NEW!



HP ScanJet 5200C

**Fast performance
scanner**

Excellent image quality. Flexible
connectivity options. Optional:
35mm slide adapter, automatic
document feeder.



HP ScanJet 6300C

Super fast!

For professional results. Five
buttons: Scan, copy, e-mail, fax
and file. Share your scanner on
your Windows-compatible
network. Scan photos in as little
as 9 seconds!

NEW!



3200C



4200C



6350C



6390C



Call for
bundles HP
Scanner+
Photoshop
or
OmniPage

HP ScanJet Family	3200C	3300C	4200C	5200C	6300C	6350C	6390C
Resolution Optical	600dpi	600dpi	600dpi	600dpi	1200dpi	1200dpi	1200dpi
Resolution Enhanced	9600dpi	9600dpi	9600dpi	9600dpi	999,999dpi	999,999dpi	999,999dpi
Scan Bit Depth	30bit	36bit	36bit	36bit	36bit	36bit	36bit
Interface Standard	Parallel	USB	USB	USB/Parall.	USB	USB	USB/SCSI
Interface Optional	-	-	-	-	SCSI	SCSI	-
Suits Windows	95/98	98	98	95/98/NT	95/98/NT	95/98/NT	95/98/NT
35mm Slide Adapter	No	No	No	Optional	Yes	Yes	No
Active Transparency Adapter	No	No	No	No	No	No	Yes
Auto Document Feeder	No	No	No	Optional	Optional	Yes	Yes
Part Number	(74116)	(81725)	(74117)	(74118)	(81726)	(81727)	(83227)
	\$185	\$259	\$299	\$459	\$999	\$1,095	\$1,859

Digital photography. No PC. No hassles.

HP PhotoSmart P1000 & P1100 Printers

**High performance printing
of digital photos,
without using a PC!**

NEW!



Download digital images directly into the printer! Simply insert the
memory card, decide on the photo size, number of copies and print.
No PC. No hassles. The PhotoSmart printers are also excellent for
everyday print jobs like letters, reports, presentations etc.

Up to 2400x1200dpi with HP PhotoRet 3! • 8MB RAM • Parallel,
USB (Windows only) interface • Supports Win95/98 and NT

P1000: 11ppm black, 8.5ppm colour.

(xxxxx) **\$Call**

P1100: 12ppm black, 10ppm colour.

(xxxxx) **\$Call**

Automatic Two-sided printing.

HP PhotoSmart C200

Digital Camera

**Takes digital
photography to a
new level in quality!**



1 Megapixel (1152x872
pixels) • 2x digital zoom • Colour 1.8 inch LCD
• 8MB CompactFlash Card (capacity of 80
basic, 40 fine, 22 superfine photos) • Supports
Win95/98 and NT • 9 pin serial (RS-232)
interface for fast picture transfer • Video cable
for TV connect • Flash • Self-timer • HP
PhotoSmart C200 Photo Imaging software

C200 (xxxxx)

NEW!

\$Call

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**See page 2
for locations**

SYMANTEC.

Web
Direct

For "live" pricing and availability
have a look at this WebLink! ☺

www.ht.com.au/cat/symantec

End PC Rage with Symantec!

Take advantage of Symantec's Cash Back Promo on the four fantastic products below.

Look for the Cash Back coupon, stickered on the box. Send in the coupon with your receipt of purchase to Symantec. Symantec will rebate by cheque. Promo ends 31 December 1999.



**Norton
CleanSweep
2000 4.7
(81110)
\$65**



**Norton 2000
2.0 (81109)
\$47**



**Norton Ghost
Personal Ed.
(78908)
\$118**

**Symantec
WinFax Pro 9.0
(67201)
\$125**



**Symantec
pcAnywhere 9.0
(78910)
\$199**



\$179

That's only \$129 after
Cash Back! (81112)

Norton SystemWorks 2000 3.0 Professional

Fully-integrated and market-leading utility suite with advanced tools for PC experts. Contents: Norton AntiVirus 2000 6.0, Norton Utilities 2000 4.5, Norton CrashGuard 2000, Norton CleanSweep 2000 4.7, Norton Web Services, Norton 2000 (Year 2000 readiness), Norton Ghost (disk/file cloning) plus free Bonus Pack: Norton Secret Stuff, WinFax Basic Edition, Visual Page and Zip-It.

\$50 Cash Back



\$139

That's only \$109 after
Cash Back! (81111)

Norton SystemWorks 2000 3.0 Standard

Everything you need to keep your PC running smoothly. Includes Norton AntiVirus 2000 6.0, Norton Utilities 2000 4.5, Norton CrashGuard 2000, Norton CleanSweep 2000 4.7, and Norton Web Services. Great value!

\$30 Cash Back



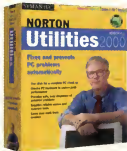
\$90

That's only \$70 after
Cash Back! (81107)

Norton AntiVirus 2000 6.0 Gold

The #1 Anti-Virus software. Easy automatic online updates. Includes new and improved features like: clear, easy-to-understand instructions on how to proceed when a virus is detected. Choose the folders or directories to scan. Scans incoming email attachments automatically. Eliminates viruses hidden in multiple compressed layers. And much more!

\$20 Cash Back



\$92

That's only \$72 after
Cash Back! (81108)

Norton Utilities 2000 4.5

Helps you solve even the most complicated PC problems quickly and easily. Take advantage of full-time background protection, or use the one-button checkups and easy-to-use wizards. Diagnoses both software and hardware problems to help you keep your entire system running at peak performance. Checks every major part of your computer. Optimises your PC to run at peak efficiency.

\$20 Cash Back



\$169

Symantec ACT! 2000 5.0

The award-winning leader in contact management software. Gives you instant access to detailed contact and account information, plus a complete history of your contact-related communications and help with managing your schedule efficiently. Integrates seamlessly with email, fax, word processing, expense tracking etc. Search for information on any contact by name, address, phone number, or other fields. Link ACT! to your Palm Pilot. Includes expert sales assistance from Dale Carnegie Training®. Forecast and track sales opportunities. And much more!



\$173

Symantec TalkWorks Pro 3.0

Brings professional voicemail and fax messaging to home offices and small businesses. Keeps you in touch with your customers 24 hours a day! Set up separate mailboxes for employees. Share a single voice modem and phone line across your entire business. Get notification when a voicemail or fax message arrives. Create reports of incoming and outgoing calls. Fax on demand. Enjoy the full functionality of WinFax PRO™. And much more.

**HARRIS
TECHNOLOGY™**

Pricing** and specifications herein are subject to change without notice



Several finance methods
available, subject to approval

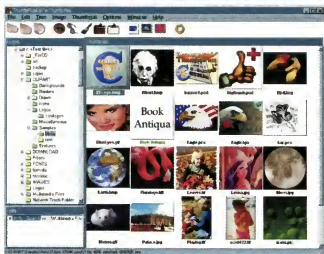
ThumbsPlus

Web
Direct

www.ht.com.au/cat/thumb

Fly Buys.

Where are your Graphics Today?



ThumbsPlus® Graphics Management Software

The most effective, elegant and inexpensive way to locate, view, edit, print and organize your images, metafiles, fonts and movies. It will even build web pages for you! Supports over 125 file types.

From
\$125



The most effective, elegant and inexpensive way to locate, view, edit, print and organise your image, metafile, font and multimedia files!

Feature packed!

- Makes it easy to find, view and maintain graphics, clip-art files, fonts and animations by displaying a small image (thumbnail) of each file
- Browse, view, edit, crop, launch external editors, and copy images to the clipboard
- Drag and drop files to appropriate directories
- Create a slide show with sound from selected graphics
- Install bitmap files as Windows wallpaper
- Print files or the thumbnails themselves as a catalogue
- Converts to several formats, even in batch mode
- Perform image editing in batch mode. Time saving!
- Convert metafile graphics to bitmaps (rasterize)
- Copy a selection from one image and paste into another. Great for creative image design!
- Create Web pages for your images with an easy to use 'Web Wizard'
- Create a 'contact sheet' with your selection of images
- Create 'User Defined Fields'. Perfect for product databases Search by your own criteria.
- Renames your files in batch mode with auto increment
- Customise your tool bar with a great selection of buttons
- Display thumbnails from Zipped files
- Image/text stamp. Used to identify the owner and details of the image/product. Insert your company logo!
- Find similar images

ThumbsPlus		For Win3.1/95/98/NT
Single User Licence	(81017)	\$125
5 User Licence	(81018)	\$415
10 User Licence	(81019)	\$789
25 User Licence	(81020)	\$1,869
50 User Licence	(81021)	\$3,499
100 User Licence	(81022)	\$6,170
200 User Licence	(81023)	\$10,049
Unlimited User Licence	(81024)	\$25,699

Fly Buys.
Collect
Fly Buys
points on
your
Computer
Hardware &
Software
when you
purchase
from Harris
Technology.
See Pg 64.

December
49

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**Do you want
Fly Buys with
that?**



Visio

**Web Direct**www.ht.com.au/cat/visio

Visualize your business

Visio 5.0 Professional

Upgrade:**\$295**

(51851)

1 User**licence pck:****\$550**

(51858)

Visio 5.0 Technical

Upgrade:**\$299**

(49420)

1 User**licence pck:****\$550**

(49422)

Visio 5.0 Enterprise

10 User:**\$13,158**

(72085)

Pricing in this catalogue might change after going to print so please call Harris Technology on 1300 13 9999 or see Web Direct Link.



(81306)

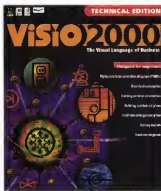
\$340

Visio 2000 Standard

The worldwide standard for creating and sharing business diagrams.

Capture. Create. Share. Understand.

Visio® 2000 Standard Edition is the fastest, easiest tool for creating professional business diagrams. It's ideal for making flowcharts, organization charts, timelines, and more, bringing the power of clear visual communication to your everyday work. The simple drag-and-drop approach and streamlined work environment - which includes a new pan-and-zoom window and easier access to custom properties data - give you greater control over your diagrams, so you can work efficiently and get the professional-looking results you need. Faster flowcharting capabilities, smarter timelines, and the powerful new OrgChart wizard help make the tasks you perform most often even more intuitive and quick. Tight Microsoft Office integration makes adding powerful graphics to your documents and presentations a breeze. Plus, it's fully Internet-enabled, so you can instantly publish your work in



(84597)

\$669

Visio 2000 Technical

The leading tool for creating precise 2-D technical diagrams and drawings.

Visio 2000 Technical Edition is faster than CAD for anyone who needs to: Create and share 2-D technical drawings and diagrams, including HVAC designs, electrical schematics,

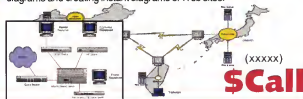
process plant layouts, and other 2-D diagrams that incorporate large numbers of predefined, connected symbols; or Work with Autodesk AutoCAD drawing files, including viewing, redlining, and annotating them; assembling SmartShapes symbols on top of inserted DWG backgrounds; or incorporating DWG drawings into technical documentation, presentations, and proposals. The key is Technical Edition's SmartShapes technology - more than 4,000 intelligent shapes designed to behave like walls, pipes, valves, pumps, and other real-world objects. With little or no training, engineers can assemble drawings by dragging and dropping these industry-standard shapes onto a page.

**NEW!**

Visio 2000 Professional

The complete solution for automated IT design and documentation

Visio 2000 Professional Edition is the market leader in IT diagramming software, delivering acclaimed, industry-standard content and tools for rapidly producing network, database, and software diagrams. Professional Edition is designed for IT professionals who need fast, efficient solutions for designing high-level LAN/WAN network topologies and directory service hierarchies, visualising proposed and existing database structures, documenting software projects with UML diagrams and creating instant diagrams of Web sites.

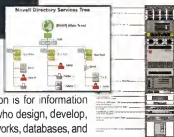


(xxxxxx)

\$Call**NEW!**

Visio 2000 Enterprise

The complete solution for automated IT design and documentation



(xxxxxx)

\$Call

Visio 2000 Enterprise Edition is for information technology (IT) specialists who design, develop, document, and maintain networks, databases, and software applications. Using the in-depth, integrated solutions in Enterprise Edition, IT specialists can create conceptual, logical, and physical views of their information systems. Users can integrate Enterprise Edition diagrams into Microsoft Office documents and presentations, e-mail messages, and Web pages for clear communication across organisation. Enterprise Edition delivers a powerful, all-in-one IT design and documentation solution that is cost-effective for any organisation.

December
Page
50

HARRIS
TECHNOLOGY™

Pricing** and specifications herein are subject to change without notice

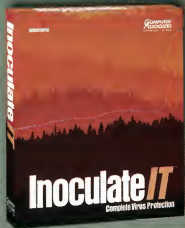


Several finance methods available, subject to approval

Go For *IT*- Management software



Complete Storage Management



Complete Virus Protection



ARCserve*IT* 6.61 Windows NT

ARCserveIT protects your most critical business asset...data. This world-leader in backup/restore technology delivers record-breaking performance, easy administration and unsurpassed reliability. An extensive suite of options offer additional client/server support, enhanced performance and automation, online backup of business applications and fast disaster recovery.

ARCserveIT 6.61 Windows NT Workgroup Edition

Installs on a single Windows NT server. 250 Clients included.

(76730)

\$728

ARCserveIT 6.61 Windows NT Advanced Edition

To backup multiple Windows NT servers with centralised management. Unlimited clients included.

(77154)

\$1,424

ARCserveIT 6.61 Windows NT Workgroup/Advanced Edition Disaster Recovery Option

(77681)

\$516

Pricing in this catalogue might change after going to print so please call Harris Technology or check Web Direct Link.

Inoculate*IT* 4.53 Windows NT

InoculateIT is the premier antivirus solution for networked environments offering unmatched management and virus protection. Exclusive features of InoculateIT include Real-Time Cure, Universal Manager, Virus Wall, Virus Quarantine, Hands-Free Updates, Extensive Alerting Options, Internet Web Browser Integration and Messaging Protection. InoculateIT is certified by the International Computer Security Association (ICSA) to detect 100% of viruses "in the wild" and ensures your network is protected against potentially damaging and costly virus incidents. InoculateIT is fully integrated with AntiVirus clients for all major desktop systems.

InoculateIT 4.53 Windows NT Workgroup Edition

Installs on a Windows NT Server.

(76149)

\$509

InoculateIT 4.53 Windows NT Advanced Edition

Provides centralised management. Installs on each server.

(77969)

\$729

InoculateIT 4.53 Windows NT Workgroup/Advanced Edition

1 User Client	(76151)	\$59
10 User Clients	(76152)	\$413
25 User Clients	(76153)	\$645
100 User Clients	(76154)	\$2,049
250 User Clients	(76155)	\$4,288



Fly Buys.

Do you want Fly Buys with that? Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See back page.

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

Do you want Fly Buys with that?

POWERQUEST

Speedy Delivery

Web
Direct

www.ht.com.au/cat/marketing

Fly Buys

Harris
Technology
now offers
Fly Buys.
Collect
Fly Buys
points when
purchasing
from us.

Now
anyone can
partition their
hard drive
!!!

Easy hard drive partitioning



(86489)

\$115

PowerQuest PartitionMagic 5.0

Create, resize, move and convert partitions without destroying data!



For years, power users have understood the secret of mastering hard drives-hard disk partitioning. Dividing a hard drive into several partitions lets you efficiently organize operating systems, programs, and data. With exciting new functionality and ease of use, the world's most trusted partitioning program, PartitionMagic 5.0 now puts the benefits of hard drive partitioning within reach of everyone.

- Graphical interface with full mouse support
- Easy-to-use
- Includes BootMagic™ for safe, effortless switching between multiple operating systems
- Create, resize and move partitions on the fly
- Easily move applications between partitions and automatically update the drive-letter references after partitioning
- Support for larger drives
- Supports FAT, FAT32, NTFS, HPFS and Linux ext2 file systems
- Create a separate partition for data to facilitate regular back ups
- Use partitions to separate data from operating systems and applications
- Test new or unstable software in a separate partition
- Recover up to hundreds of megabytes of hard disk space by resizing inefficient FAT clusters



**DRAGON
SYSTEMS**

Supports
Australian
Speech

Voice Recognition

Dragon Naturally Speaking Mobile

Includes hand-held Dragon NaturallySpeaking™ digital recorder which holds up to 40 min. (approx. 10 pages) of recorded speech. High-quality headset microphone. Dragon NaturallySpeaking Preferred, cable, linking software. (70978)

\$378

Dragon NaturallySpeaking 4.0 Standard

(82482)

\$196



Don't type, just use your voice! With Dragon NaturallySpeaking Standard,

the award-winning continuous speech recognition solution. Dictate into virtually any Windows application, including Microsoft Word 97 & 2000, Corel WordPerfect 8 & 9, and Lotus Notes. Even activate pull-down menus and issue voice commands like "Insert table" or "Print file" in Office 97 & 2000. Browse the Web and use hotlinks by voice, when using Microsoft Internet Explorer 4.0 & 5.0. Talk into chat rooms and Instant Messaging windows at up to 160 words per minute! Large vocabulary of 250,000 words and 160,000+ active words.

Dragon NaturallySpeaking Essentials 4.0

The ideal, affordable introduction to continuous speech recognition for users age 9 and older. Special teen voice models are included so it's easy for young adults to talk into chat rooms and get their homework done easily.



(82483) **\$89**

Dragon NaturallySpeaking Preferred 4.0

Dictation Play back. Use a Dragon Systems-certified recorder (sold separately) to capture your dictation for automatic transcription when you're away from your computer. Includes Naturally Mobile software.



(82484) **\$319**

December

Page
52

**HARRIS
TECHNOLOGY™**

Rent: Short or long term. Several options available. Ask for Christine Dalton.



All prices include sales tax & subject to change w/o notice.



Total protection for your PC



McAfee Office 2000

McAfee Office 2000 combines everything you'll ever need to fix, protect, and optimize your PC into a single integrated utility. It contains the following great utilities:

1 VirusScan 4.02

Safeguards your PC from ALL viruses.

2 First Aid 2000 6.02

Fixes more Windows problems than any other software—automatically!

3 Nuts & Bolts 98 2.03

Clean, optimize, monitor, and analyze your PC and software.

4 Y2K Survival Kit 1.0

Contains all the tools you need to ensure that your PC successfully rolls over to the year 2000.

5 Oil Change 2.5

Updates your software... automatically!

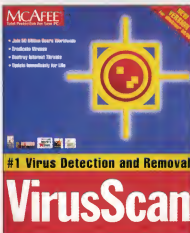
6 UnInstaller 5.12

Keep your PC humming like new with UnInstaller.

(82448)

\$149

\$50
CASH BACK



McAfee VirusScan 4.0 Classic Edition

Stop viruses before they stop you with the Number 1 in Virus Detection and Removal!

The need to protect your PC has become vital as there are now over 40,000 known computer viruses with more than 300 new viruses being created each month.

Using only the latest technology, VirusScan detects 100% of viruses from floppy disks, Internet downloads, e-mail attachments, networks, shared files, CD-ROM and online services. It also scans inside the most popular compressed file types, and even protects against the newest threats to data security: Office 97/2000 macro viruses. The on-line virus encyclopedia and calendar deliver expert information on the latest viruses. And, with the Emergency Disk creation utility, you can easily recover from boot virus infection.

(70216)

\$62

\$60
CASH BACK

Fly Buys

Harris Technology now offers **Fly Buys**. Collect **Fly Buys** points when purchasing from us.



Virus Scan Deluxe

Includes VirusScan Classic, First Aid 98, Oil Change.
(70215)

\$77

\$40
CASH BACK

For Cash Back Offer details see coupon on the box!

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

See Page 2 for Locations

Microsoft®

Harris Technology can SAVE your business MONEY. Just phone our friendly call centre staff on 1300 13 9999 for more information on Microsoft Open License products.

Save time, save money with...

Microsoft® **Open License**

Start Saving Now with the Microsoft Open License Program



When it comes to purchasing software for your organisation, you want to save money and lower overheads while retaining the flexibility to expand. But how do you do it? The answer is simple. If you have 5 PCs or more, then you can purchase your software through the Microsoft Open License Program (MOLP) and make considerable savings.

Fly Buys.

Collect Fly Buys points on your Computer Hardware & Software when you Purchase from Harris Technology. See back page.

The Microsoft Open License Program is the easiest way to ensure that your organisation is both compliant, and safe from the perils of software piracy. There are steps you should take now to ensure your compliance:

- Contact your partners to help you select the Microsoft License Program that best suits your needs.
- Complete and return the attached assessment form
- Conduct a software audit
- Acquire software for your organisation only from reputable dealers
- Keep watch on your PCs to ensure that suspect software does not find its way in
- Inventory all documentation, including original disks, manuals, licenses, invoices and receipts
- If applicable, use eMOLP to manage your software assets online

Call Harris Technology on 1300 13 9999 for licensing on:



Windows NT
Server



Windows NT
Workstation



Office 2000
Standard



Office 2000
Small business



Office 2000
Professional



Office 2000
Premium



Office 2000
Developer

Microsoft® Press**Get Ready for Windows® 2000!**

To help you get quickly up to speed on the latest technology, Microsoft Press® offers several titles designed to train users on the new versions of Microsoft's popular Windows® operating system.

Microsoft Press Introducing Windows® 2000 Professional**Microsoft Press Introducing Windows® 2000 Server****Microsoft Press Upgrade to Windows® 2000 Training Kit****Microsoft Press Windows® 2000 Beta Training Kit**

Explains how this robust client technology fits into overall Windows 2000 network operating system structure. It also compares Workstation functionality with that of the Windows 98® operating system. Readers get pre-released information about product reliability, scalability, security, and power.

\$49 (83236)

INTRODUCING MICROSOFT WINDOWS 2000 SERVER is the book that IT professionals, managers, developers, system integrators, and consultants will want to read before and after the release of Windows 2000 to evaluate the product's principal enhancements at the server level.

\$49 (82669)

This kit teaches IT professionals how to set up, upgrade, and troubleshoot a Beta 3 installation of the Windows 2000 operating system. The curriculum focuses on understanding the changes from Windows NT® 4.0 and working effectively with the new system architecture, user interface, user profiles, and built-in networking components.

\$165 (84166)

Here's official Microsoft training material to help IT professionals install, configure, and support the pre-release edition of the Windows 2000 operating system. This modular, self-paced kit provides learners with the information and hands-on practice they need to exploit this technology's significantly enhanced reliability, security, networking, and performance capabilities.

\$165 (75949)**Fly Buys.**

Want some **Fly Buys** with that?

You can collect **Fly Buys** points whenever you purchase Books, Hardware and Software from Harris Technology

More details on the back page.

**Microsoft Press Inside Moves**

Perfect companions for Microsoft's new gaming titles

**\$36** (74229)

Flight Simulator 2000
Inside Moves

**\$32** (83067)

Age of Empires 2:
The Age of Kings
Inside Moves

Microsoft Press Training Kits

Get the most authoritative information direct from the source. Each Training Kit includes 120-day evaluation software to enable you to do hands-on, live-in-the-application training-saving you money.

MCSE Core Requirement Training Kit	(65577)	\$345
MS Certified Professional & Internet Training Kit	(65578)	\$349
MS Exchange Server V5.5 Training Kit	(56278)	\$125
MS Internet Information Server/Proxy Server Training	(61343)	\$125
MS SNA Server Training Kit	(74146)	\$184
MS SQL Server 7.0 Database Implementation Training Kit	(76855)	\$125
MS SQL Server 7.0 Database Implementation Online Training Kit	(84168)	\$133
MS SQL Server 7.0 Systems Administration Training Kit	(77404)	\$126
MS SQL Server 7.0 Systems Administration Online Training Kit	(80591)	\$133
MS SQL Server Data Warehouse Training Kit	(84172)	\$145
MS Systems Management Server 2.0 Training Kit	(76037)	\$125
MS TCP/IP Training	(57150)	\$113
MS Windows 98 Training Kit	(63776)	\$125
Supporting MS Windows 98 Online Training Kit	(84205)	\$65
Microsoft Windows NT 4.0 Network Administration Training	(38131)	\$102
MS Windows NT Server 4.0 Enterprise Technologies Training	(61342)	\$126
MS Windows NT 4.0 Technical Support Training	(38204)	\$125
Networking Essentials, Second Edition	(38133)	\$120
Networking Essentials, Third Edition	(82154)	\$114



We use Adobe products to produce our advertising documents

Leading Image Software

More from Adobe®

FINALLY IT'S HERE!
Adobe InDesign® CrossGrade (80424)

\$495

Only available to existing users of Quark XPress, Photoshop, PageMaker or Illustrator.



Publishing Collection now with Photoshop 5.5 (81016)

\$1,749



PageMaker 6.5 Plus! (75897)

\$819

Illustrator 8.0 (67039)

\$699

Dimensions® 3.0 (41192)

\$254

Adobe Design Collection

Unleash your creativity with powerful, integrated Adobe design tools

The Adobe Design Collection contains four leading-edge design and publishing applications in one fully integrated suite:

- Adobe InDesign™ 1.0
- Adobe Photoshop® 5.5
- Adobe Illustrator® 8.0
- Adobe Acrobat® 4.0

Together, these programs give you everything you need to create and produce professional images, illustrations, and layouts, and to publish documents across media. Plus, the collection offers substantial savings over the cost of buying the programs separately.

The collection delivers a powerful set of tools that form the basis for an exceptionally smooth design workflow. Built on a new state-of-the-art code base, InDesign is redefining professional publishing software. Photoshop and Illustrator are the world's leading image-editing and illustration programs. Acrobat is rapidly becoming the standard for exchanging, reviewing, and outputting files with precision.

Don't forget to collect your Fly Buys points. (81011)

\$2399



\$1835

Adobe Acrobat® 4.0

The essential tool for universal document exchange (Convert any document to PDF!)



Tired of colleagues not being able to open your documents? Frustrated by software and platform incompatibilities that destroy your documents' look and feel? You need Adobe® Acrobat®. It's the most reliable, efficient, and effective way to share information electronically. Acrobat lets you convert any document into an Adobe Portable Document Format (PDF) file, with its original appearance preserved, then distribute it for viewing and printing on any system.

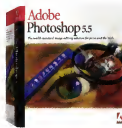
(75294)

\$429

Adobe Photoshop®

5.5

The world standard image-editing solution for print and the Web



Complete integrated image-editing solution for print and the Web. New in this version: now includes Adobe ImageReady 2.0, for seamless workflow for Web graphics. New LiveView panels with choice of 2-up or 4-up views, glossy GIF feature for 10-50% smaller file sizes, easy animation controls, powerful JavaScript rollover effects, Update HTML command, create sliced images etc. PDF 1.3 support.

Don't forget to collect your Fly Buys points.

(79415)

\$1,159

Adobe InDesign®

The future of professional publishing



CrossGrade now available

Adobe InDesign software is a new state-of-the-art page layout program that delivers unprecedented creative freedom, productivity, and precision while integrating seamlessly with Adobe's other leading design programs. Adobe InDesign removes the creative barriers presented by previously available publishing software, providing a powerful new set of tools that can shorten the distance between inspiration and reality.

(76475)

\$1,195

Discover

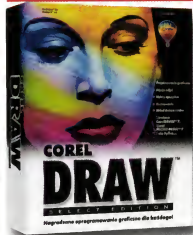
Page 56

Award Winning Graphics

Fly Buys.

Introducing **Fly Buys** at
Harris Technology.
Would you like **Fly Buys**
points with that?

Corel Draw Select



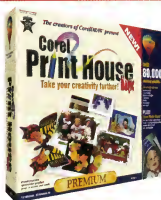
It's so
quick to
learn and
easy to
use.

(67251)

\$79

CorelDRAW™ Select Edition is an exceptional graphics suite that gives you the tools you need for breathtaking results. Take advantage of **CorelDRAW 7** and **Corel PHOTO-PAINT™ 7** for graphic design, photo editing, special effects, illustration and page layout. Plus, a host of utilities makes the design process much more intuitive. CorelDRAW™ Select Edition—a powerful graphics solution for everyone!

Corel PrintHouse



Corel Print House
Magic Premium

(75318) **\$90**

Corel Print House
Magic Classic

(75317) **\$57**

Corel Print House
Magic Wizard of Oz

(72813) **\$65**

Dazzling Creations in a Flash!

Express yourself with Corel Print House™ Magic, the fun all-in-one graphics package. Create dazzling greeting cards, banners, invitations, business cards, flyers and many other projects in a flash. Use thousands of fully customizable samples or personalize your own designs. Touch up or Alter your favourite photographs, and keep track of family, friends and special occasions using the all-in-one Calendar, Address Book and List Manager. (Corel Print House Premium Pictured)

Custom Photo PC

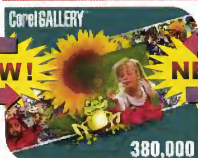


Give your photos amazing impact with Corel® Custom Photo. This easy-to-use Photo-editing software lets you add more than 30 fun effects to your favourite pictures and personalize your projects with over 10,000 graphics. Whether you're e-mailing projects or publishing them to the Web, Corel CustomPhoto gives you spectacular photos in a snap!!

\$Call

(xxxxxx)

GALLERY 380,000

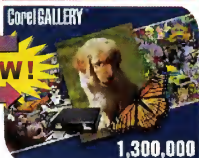


Whether you need clipart images, Web graphics, animated objects of photos, Corel GALLERY™ 380,000 puts a world of images at your fingertips. Browse hundreds of categories or search by keyword to find what you're looking for fast. Then just drag and drop to add life to print projects or Web pages.

(84848)

\$108

GALLERY 1,300,000



Give your projects a professional look with Corel GALLERY™ 1,300,000, an incredible collection of high-quality clipart images, photos, sounds, animated objects and Web Graphics. Easy to use, this collection is ideal for print projects, Web pages, and presentations. Plus, exceptional value makes it fit your budget.

(84851)

\$215

**Free 30-
Day Trial
CDs**

available for
CorelDRAW
9, Print-
House Magic
and Corel
Ventura!



**Paradox 9
Developer
Edition**

Full Version
(80946)

\$645


CorelDRAW 9

Full Version
(76039)

\$799


**Corel
WordPerfect
8 for LINUX**
(76876)

\$89

Page

57

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**Open
7 Days**



Fly Buys.

Want Fly Buys with that? Collect Fly Buys points at Harris Technology. Page 64 has the details.

Web Direct

www.ht.com.au/cat/ashton

Special Christmas Promo



The Complete National Geographic 109 Years of National Geographic on CD-ROM

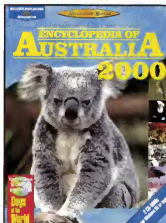


(86102)

\$199

For the very first time on CD-ROM, you can relive thousands of fascinating stories reported over the past 109 years in National Geographic magazine. It's a virtual archive of our cultural history and collective heritage. Includes top-notch search engine. Scan for articles, award-winning photographs, maps and more by date, issue, topic, or title. Exclusive access to an on-line resource centre, collector's corner, and National Geographic community centre. Relive 100 years of nostalgic advertisements, which showcase premier brands and products.

Websters Encyclopedia of Australia 2000



(86109)

\$84

Includes book:
Australia 2000
If you have been looking for an outstanding encyclopedia that is entirely focused on Australia, you can stop searching-this is it!

- The ultimate multimedia reference guide to Australia
- Jam-packed with information, thousands of pictures and quality video
- Ideal for school projects and general reference
- Download free Internet updates every month
- Includes the Australian Heinemann Dictionary

Kai's Power Tools 5

Redefine the possible with this set of special effects plug-ins for Photoshop. For the professional, or just for fun. (72519)

\$275

Upgrade:
(74060)

\$188

Ray Dream Studio 55



RayDream Studio 5.5

3D Design and animation. (79022)

\$588



Headline Studio

Setting the new standard in GIF animation. (77613)

\$199

Painter 6 - New!



Get creative with the ultimate painting tool! Offers an extensive array of brushes, textures, canvas choices, and art materials to faithfully capture the subtleties of an artist's style for high-quality output for print and the Web. New features include text along a curve, layering of vector and bitmap images together, better memory handling and an easier to use interface.

Upgr. (84453) **\$325** Full: (83384) **\$730**

3D Suite 4 - New!



A value-packed combination of three award-winning 3D-creation tools: Bryce 4 - Design, render and animate breathtaking natural 3D worlds and abstract 3D sculptures. Easy to use. Canoma - Create photorealistic 3D models from scanned or digital photographs quickly and without extensive 3D skills. Poser 4 - 3D-character animation and design tool for digital artists and animators. (Pictured is version 3)

(86110) **\$1,094**

Carrara - New!



The complete 3D solution for modeling, shading, scene building, animation, rendering, and special effects. Built for the creative professional who is advancing into the world of 3D. Customised with additional plug-ins for unlimited creative freedom. Optimised for blazing performance with High Speed Rendering and support for Open GL. Creates high-quality 3D output for the web, multimedia and print.

(86111) **\$998**

Bryce 4



(75941)

\$457

Upgrade: (76734)

\$225

Design, render and animate breath-taking natural 3D worlds and abstract 3D sculptures. It is a perfect application for both beginners and advanced users because it comes loaded with libraries of presets to use in your own work. Easily create your own surface materials, skies and more.

Poser 4



(79023)

\$409

Upgrade: (79156)

\$246

Provides artists, Web creators designers and animators with an unprecedented tool set for easily adding posed and animated figures to their work. Character customisation via 'closets' full of clothing and head to toe figure 'sculpting', advanced lighting, cameras, single-track sound capability etc.

December
Page
58

HARRIS TECHNOLOGY™

Pricing** and specifications herein are subject to change without notice



Cheques OK with 2 x Valid ID
or T/T. Call for details.



Fast and Friendly
Customer Service, with
speedy delivery

Web
Direct

www.ht.com.au/cat/ashton

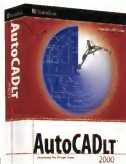
What today's CAD designers want

AutoCAD LT 2000

Full Version: (81482) **\$789**

Upgrade:
(81486)

\$269



AutoCAD LT®
2000 is the
perfect low-cost,

2D CAD tool for today's design environment. That's because there's usually an extended design team working on every project. From the architects and engineers to the drafters, consultants, and clients—your entire team will communicate more easily, share data more accurately, and work more efficiently thanks to all of the professional-strength features of new AutoCAD LT 2000.

Actrix Technical

(79021) **\$495**



2D
Diagramming
tool
Imports DWG
files

Provides a
truly automated
drawing en-
vironment for easily creating a full range of
dynamic drawings, from facilities plans to
technical schematics to business diagrams.
Establishes a new standard for intuitiveness
and simplicity. Just select the template that suits
your task and browse the catalogs you're
shown. Then drag and drop the ActiveShapes™
objects you need into your diagram or drawing.

Actrix Business

(81492) **\$179**



Create
professional-
looking,
effective
diagrams

Hit the ground
running with a
familiar Microsoft
Office-like interface and more than 1,000 pre-defined
drag and drop Active Shapes, objects organised
into easy access catalogs. Easily drop your
diagrams into Microsoft Word, or PowerPoint
documents, or publish files as HTML pages on
the Internet, complete with Hyperlinks. Express
your ideas clearly through compelling visuals that
facilitate communications and expedite decisions.



**QuickCAD
Millennium**
The faster,
easier, most
affordable
CAD
software, whether
you're a first
time user or
an expert.
(80899)

\$75



**AutoSketch
6.0**
Combines the
power and
precision of
CAD with the
ease of a
customisable
drawing
interface.
(06701)

\$169



**HomeSuite
(81496)**

\$79

Page
59

Smart Architect LT

Free
upgrade to
LT 2000
version!



(86112) **\$914**

This architectural drafting application vastly
enhances the ability of AutoCAD LT 97
and 98. It caters for all types of building
development. The main features consist
of walls, windows, doors and roofs, giving
the ability to generate 2D drawings and
3D models. Provides tools to cut sections,
peel off elevations and automatically
dimension the building.



(86113) **\$278**

Free
upgrade to
LT 2000
version!

LT 3D

LT3D is a full 3D modelling
plug-in for AutoCAD LT 97
or 98. LT3D provides AutoCAD LT with
a range of tools to cater for all types of
3D modelling as well as the power to
modify and measure. It includes routines
for creating 3D surfaces and solids, and
tools for modifying and editing them. In
addition there are some routines to make
viewing and manipulating your 3D scene
much easier.

AutoCAD 2000 Student Version

(You will need to provide a copy of your
Student ID)



(86114) **\$246**

A feature-rich, streamlined, forward-
looking release of the world's leading CAD
software product. More than 400 new
enhanced productivity tools. Quickly
search, extract and re-use specific design
data. Works simultaneously between
drawn files. Drag and drop exchange of
design information from file to file.
Automatically scales drawings to fit your
plotter.



(86115) **\$199**

3D Studio Max + Character Studio

Student Version

(You will need to provide a copy of your
Student ID)

3D Studio Max: Professional 3D
modelling and animation. Quickly create
richly textured, high quality images and
animations. Character Studio is an
extension for 3D Studio MAX. For large-
scale, professional character animation
production. Create characters that move
with amazing realism.

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

**Open
7 Days**

LEXMARK™

Looking for more information?

Web
Direct

www.ht.com.au/cat/lexmark

Passion for Printing Ideas



Lexmark Consumables
Please see our Web Direct for all your LEXMARK ink and paper needs

Lexmark Z31 Color Jetprinter™

The Photo Quality Printer

Offering 1200 x 1200 dpi and up to 8ppm, the Lexmark Z31 Color Jetprinter™ is in a league of its own. A dual cartridge design offers more economical printing and accommodates an optional photo cartridge for even more realistic output, and the patented Accu-Feed™ paper handling system ensures virtually jam-free printing.

(84604)

\$315



Lexmark Z51 Color Jetprinter™

The Performance Printer

Utilising an advanced new colour cartridge, the Z51 is capable of exceptional photo quality printing straight out of the box. USB interface, which improves connectivity with your PC, Accu-Feed™ paper handling, 1200 x 1200 dpi and a print speed of up to 10ppm, are all standard features of the Z51.

(84605)

\$449



Lexmark 1100 Color Jetprinter™

The Value Breakthrough

Delivering great colour at a low cost, the Lexmark 1100 Color Jetprinter's™ neat, streamlined design enables it to go anywhere. It offers easy setup and operation with automatic driver installation. And with the highest resolution and print speed in its class, you get the quality of a more expensive printer.

(86475)

\$137



Lexmark 3200 Color Jetprinter™

Great Results Made Easy

The Lexmark 3200 Color Jetprinter™ makes great results easy. You can count on excellent quality for all your printing projects. From automatic driver installation, to on-screen ink level indicators, this printer encompasses Lexmark's ease of use standard.

(74464)

\$257



Lexmark 5770 Photo Jetprinter™

The Digital Photo Printer

Download digital camera images directly into the printer and print! You don't need a PC with Lexmark's 5770 Photo Jetprinter! The in-built camera computer enables you to print an index card, select, crop, frame and add messages to your pictures. The 5770 leads a new era in digital photography printing.

(86469)

\$637



macromedia



Fast Delivery
Country-wide

Web
Direct

www.ht.com.au/cat/macromedia

Add Life to the Web with Macromedia

Want Fly Buys with that? Collect Fly Buys points at Harris Technology. Page 64 has the details



Flash 4

(79110)

\$527



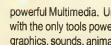
The solution for producing High-Impact, Vector Based Web Sites. Flash 4 is the vector-based standard that empowers you to easily design and reliably deliver distinctive, high impact, low-bandwidth sites to all browsers.



Director 7

(72410)

\$1,725



Shockwave Internet Studio
The standard for creating and delivering powerful Multimedia. Unleashes your creativity with the only tools powerful enough to combine graphics, sounds, animation, text and more.



Fireworks 3

(xxxxx)

\$Call



Design fully-editable Web graphics that integrate seamlessly with popular HTML editors and graphics tools. In Fireworks 3, everything is Javascriptable so you can automate repetitive tasks.



Web Design Studio

(70659)

\$918



Includes Flash 4.0, Dreamweaver 3.0, and Fireworks 3.0. A complete solution for

Web Design from Macromedia. Allows graphic and Web Designers to work seamlessly through the design and production process.



Dreamweaver 3

(xxxxx)

\$Call

Dreamweaver gets even better!!! Build cross-browser Web sites and maintain total control over HTML. A streamlined workflow, customisable working environment, and extensibility saves hours of your production time.



DrumBeat 2000

E-Commerce Edition

\$869

DrumBeat 2000 is the fastest way to create safe, fully customisable online stores that support thousands of products and are simple to maintain.

HARRIS TECHNOLOGY™

Pricing** and specifications herein are subject to change without notice



Cheques OK with 2 x Valid ID or T/T. Call for details.



Order on-line ⇨
Delivery Australia-Wide

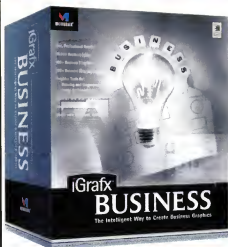
Web
Direct

Check here for the latest information

www.ht.com.au/cat/micro

MICROGRAFX intelligent graphics at work

Fly Buys.



iGrafX[™] BUSINESS

The intelligent graphics solution designed for today's business or home user.

Features uniquely powerful and truly easy-to-use tools for diagramming and drawing, image editing and 3D. Features MS Office compatibility, 400+ templates, HTML publishing, helpful wizards, and 25,000 pieces of clip art. Also includes iGrafX Share which allows all users to easily view, add, share and organise graphics and files.

PRICE DROP Was ~~\$359~~ (76630) NOW ONLY

50% off

\$169

Licensing

iGrafX Professional

1-30 Users
Per user
(76981)

\$529

31-75 Users
Per user
(76982)

\$499

iGrafX Process

1-10 Users
Per user
(76983)

\$1,289

11-30 Users
Per user
(76984)

\$1,259

iGrafX Designer

1-30 Users
Per user
(79059)

\$559

31-75 Users
Per user
(79060)

\$525

All pricing above is price per license.

iGrafX[™] PROCESS

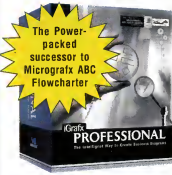


The ultimate tool for business process improvement.

Powerfully integrated diagramming, simulation, and analysis features will help you reduce cycle times and costs, eliminate bottlenecks, re-deploy resources and more. Features MS Office compatibility, HTML support, VBA extensibility & network-enabled application deployment. Includes iGrafX Professional, iGrafX Business and iGrafX Share.

Was ~~\$1,770~~ **PRICE DROP**
(76631) **\$1,485**

iGrafX[™] PROFESSIONAL



The intelligent way to create business diagrams

iGrafX Professional from MicroGrafX is the only diagramming solution with unique built-in intelligence. It's the most powerful way to visualise solutions with graphics, with intuitive tools for diagramming business processes, networks, organisational structures, and more. Includes MS Office Compatibility and VBA extensibility.

Was ~~\$695~~ **PRICE DROP**
(76629) **\$595**

iGrafX[™] DESIGNER



Create powerful, intelligent graphical solutions.

iGrafX Designer is the only complete toolset for technical and Web graphics with micron-accurate scale drawing, creative tools and imaging graphics for publishing and the Web. Features: transparent vector effects, object and layer browser, customisable object association and more. Includes iGrafX Business and iGrafX Share.

Was ~~\$725~~ **PRICE DROP**
(78475) **\$595**

Sales 1300 13 9999
Fax 1300 13 6666

Website www.ht.com.au
E-mail sales@ht.com.au

Do you want Fly Buys with that?

Disney
INTER
ACTIVE



Fly Buys.

Want **Fly Buys** with that?
Collect **Fly Buys** points at
Harris Technology.
Page 64 has the details.

Web
Direct

Looking for more information?

www.ht.com.au/cat/disney

The Magic of Disney



SWING in to
HT and get
your copy
today!



The Villains Revenge

Prepare to experience one of the most amazing Disney adventures of all time, with Jiminy Cricket as your guide! Your mission: to journey into Disney's most famous stories and restore the happy endings before the villains take over forever. The fate of Peter Pan, Alice in Wonderland, Dumbo, and Snow White rests in your hands. Immersive first-person perspective puts you in the middle of the action, with eye-popping 3-D worlds and stunning animation. Enjoy hours of replayable puzzles, games, mazes, and exploration, and special reward video clips of classic Disney animation. Without you there will be no happy endings!

(86474)

\$45

Winnie the Pooh Toddler

Disney's Winnie the Pooh Toddler opens young minds to active learning by emphasizing creativity, discovery and activity in the Hundred Acre Wood. Through personalised interaction with Winnie the Pooh and his friends, toddlers strengthen key skills including letters, numbers, shapes, colors and music at their own pace.



(81562)

\$45

Tarzan Action Game

Jungle Fever is Spreading!

Prepare for adventure as you swing on vines, shoot white-water rapids, & tree surf through 16 adrenaline-pumping levels of non-stop, 3-D action. Overcome the Jungle's most dangerous perils.



(76450)

\$45

Winnie the Pooh Kindergarten

Kindergartners experience the magic of active learning including creativity, discovery and activity as they attend school with Winnie the Pooh and his friends in the Hundred Acre Wood. Parents and educators can adjust the product to enhance children's individual skill levels.



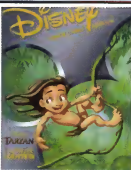
(81564)

\$45

Tarzan Activity Centre

Swing into a Jungle full of fun

Get ready to swing into a jungle full of fast-action arcade games, challenging multilevel puzzles, and free-form art activities with Tarzan, Terk, & Tantor. Over 60 levels of gameplay!



(76451)

\$45

Winnie the Pooh Preschool

Preschoolers gain an early understanding of letter recognition, number recognition, phonics, sequencing and much more through a magical Winnie the Pooh story-based journey encouraging creativity, discovery and activity in the Hundred Acre Wood.



(81563)

\$45

Tarzan Print Studio

Your very own personal projects

Create your very own print projects:- stickers, school calendars, greeting cards, party invitations, and much, much more featuring your favourite Tarzan images.



(76449)

\$35

Want
Fly Buys
with that?
Collect
Fly Buys
points at
Harris
Technology.
Page 64 has
the details.

Discover
Page
62

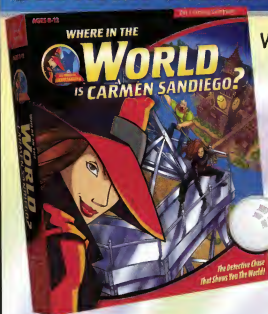
**HARRIS
TECHNOLOGY™**

Pricing** and specifications herein are subject to change without notice



Cheques OK with 2 x Valid ID
or T/T. Call for details.

Carmen Sandiego Series



Where in the World is Carmen Sandiego?

A crime-stopping voyage through history! Your search for Carmen begins in Ancient Egypt and ends with the first space launch. Along the way you'll learn about events, achievements and personalities including Columbus, da Vinci and Queen Elizabeth. To dig even deeper, consult the Chronopedia, an electronic reference book approved by Encyclopedia Britannica.

\$60

(85907)

Carmen Sandiego's Think Quick Challenge

Carmen Sandiego is stealing the world's knowledge! Outwit her and her cohorts in a series of fast-paced challenges that test your knowledge in a variety of subjects. Play on your own or with up to three other ambitious ACME agents.



\$60

(84566)

Carmen Sandiego's Great Chase Through Time

Discover centuries of historically rich events as you try to capture Carmen Sandiego and her crooked cronies. With two CDs worth of time travel, over 50 historical figures to meet and the ACME Chronopedia, kids expand knowledge of World History, Historic Events, Ancient Civilisations and Scientific Advances.

\$60

(84570)



Print Shop Standard
Greeting cards, banners, signs, calendars and more are just a click away! Birthday cards, welcome banners, photo albums, yearly calendars featuring your family photographs.

\$75

(77735)



3D Home Architect

Gives you everything you need in a single application: pre-drawn plans, a huge library of furniture symbols, a materials list plus 3-D views from virtually any perspective.

\$60

(49026)



Family Tree Maker Deluxe 7.12-CD set.

This #1-selling genealogy program is the easiest and most complete resource for building your family tree. Find your ancestors, guaranteed. Superior Internet features. Create multimedia scrapbooks & on screen slide shows. Hundreds of custom reports, historical timelines, calendars etc.

\$117

(85966)



Collect Fly Buys Points



Present your Fly Buys card and collect 1 standard point for every \$5 spent with Harris Technology.

Fly Buys.

Now you can collect Fly Buys points on computer hardware and software from Harris Technology!

Ordering/More Information

To order or for more information on computer products, fill in the form below and fax to Harris Technology, **FAX 1300 13 6666**, or mail to: P.O. Box 647, North Ryde, NSW 2113.

I want ☐ to order: ☐ more information on: (Please tick)

Description	Quantity	Part Number	Price

Name: _____ Company: _____ (See page 2 for costs). Freight _____
Address: _____ Total _____
Suburb: _____ Postcode: _____

Telephone: _____ Email: _____ Fax: _____

Pay by: ☐ Cheque ☐ MasterCard ☐ Bankcard ☐ Visa ☐ Amex Expiry date: _____

Card number: Signature: _____

*We are unable to deliver to PO Box's for insurance reasons.



SOFTWARE WAREHOUSE

ACN 078 053 644

December 1999

**\$50
Cashback**

**MS Office 2000
Professional Upgrade**
see p23



**\$50
Cashback**

**SystemWorks 2000
Professional**
see p37



**Only
\$19**

see p2



**ADAPTEC
Easy CD Creator
4 Deluxe**

see p7



**Corel Draw 9
with FREE CANON ZX300**

see p26



Hot Summer Deals!



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at
www.iswh.com.au



**No.1
SERVICE**

As an International
Company we have won
more awards for products
and service than any
software mail-order
company



ADDRESS

Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Lines open
8.30am 'til 6.00 pm (EST)
Monday to Friday
10.00am 'til 3.00 pm (EST)
Saturday

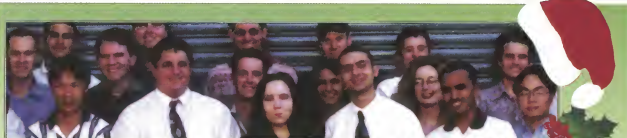


**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003



Merry Christmas & a Happy New Year From all at International Software Warehouse

Stocking Fillers

Bodyworks 6



Bodyworks 6 - the complete reference and educational tool for the human anatomy. Take a multimedia tour of the body. With thousands of references, coupled with fantastic pictures, narration and even 3D rotations, this truly is a fantastic way to learn about the body!

BOD010
\$9.95

Comptons Multimedia Bible



Great for adults and kids alike, with easy to read articles and fun animations, Comptons Interactive Bible walks you through by using different ways to let you get involved in reading and learning the bible. Includes 37 000 articles on the bible.

COM013
\$9.95



35 000 Masterclips

35 000 pieces of clipart and photographs. Perfect for enhancing reports, projects and presentations.

IMS016
\$5.95



**Free Gift
with every Order!
Worth \$19
*while stocks last**

Toolbox 2000



Checks your PC for Year 2000 compatibility (less than one month away!) and tells you how to fix the problems. Checks the Time Clock, BIOS and hardware compatibility, as well as scanning your Windows settings and data files.

Limited Stocks
MAC053
\$14.95

Uninstaller

Cleans out your PC and gets rid of junk files - automatically! Your PC is probably crammed with unwanted software and junk files that can slow down your PC and cause problems! If you try to remove these files without Uninstaller, you may overlook some, or worse, delete required or critical files. Uninstaller cleans the junk but protects your crucial files - it's the safest way to clean up your PC.



UNI006
\$14.95

CD-Rs



**Only
KOD042
\$2.70**

CD-RWs



**Only
PRI010
\$5.95**

Hot Price Favourites

56K & V.90 Modem

- Headset with Microphone
- Webstats Software worth \$50
- Internet Starter Kits with 50 to 100 hrs free Internet time
- Dual 56K Flex and V.90
- 5 Years Warranty
- Free Technical Support



See page 17

ABC003
\$99

Home Movie Director

Now you can produce a Video Family Album quickly & easily using just your camcorder & VCR. Contains easy to follow handbooks & set up guides, script editor, video label printer plus a bonus instructional video & CD-ROM. This motion picture album is a must for all camcorder owners.



NIT020
\$19

CorelDRAW Select Edition

This exceptional graphics suite gives you the tools you need for breathtaking results. Take advantage of CorelDRAW 7 & Corel PHOTO-PAINT 7 for graphic design, photo editing, special effects, illustration & page layout. Plus, a host of utilities makes the design process much more intuitive.



COR542
\$79

WebSearch Code: ABC003

WebSearch Code: NIT020

WebSearch Code: COR542



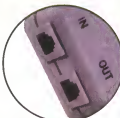
Index

Order Form	48
Terms & Conditions	46
Christmas Specials	2

3Com	18	McAfee	41
ABC Modems	17	MetaCreations	32
Adaptec	7	Micrografx	31
Adobe	27	Microsoft	3, 23, 46, 47
Ascent Solutions	36	Microtek	15
ATI	19	Mijenix	36
AusLink	16	Mitsubishi	4, 6
AutoDesk	29	MSI	5
Avermedia	20	MYOB	25
AVTEK	16	National Geographic	32
Caere	33	Notebooks	4
Canon	10, 11, 14	PC's	5
Compro	5, 20	Pinnacle	19
Corel	22, 26	Pioneer	6
Daewoo	4	Pixel	40
D-Link	17, 21	Plantronics	5
Dragon Systems	44	PLAY	38
DTMS	34	Pontis	3
EPSON	12-14	PowerQuest	39
Green & Gold Enterprises	30	Princo	3, 8
Greenwich Meantime	40	Quantum	5
Hauppauge	18	Quicken	24
Hewlett Packard	7, 12, 15	Sausage Software	38
IBM	30	Sirius	17
Imaging	8, 9	Symantec	35, 37
Kodak	3, 7, 8	Travelling Software	34
Kyocera	10	UMAX	14
LaBelle	8	Verbatim	6, 7
Lexmark	10	VET	36
LifeView	18-20	ViaGrafix	45
Lotus	34	Visio	28
Macromedia	31	Xircom	16
MAUS	42, 43		

Jackson Surge Protector

- Slimline case allow for use in tight areas
- 6 X 240VAC surge protected power outlets
- USW RJ45 or RJ12 connectors - supplied complete with adaptors
- Extra long power cord
- Light indicator showing power available
- Circuit breaker with protected reset function
- Suitable for: Internet, Modem, Computers, Laptops, Answering Machines, Caller ID, Cordless Telephones & Fax Machines



2 modular sockets for protecting your telephone, modem, answering machine, fax machine etc...

JACK01

\$59

WebSearch Code: JACK01

Microsoft Intellimouse Explorer



The Intellimouse Explorer replaces the rubber ball mechanics of a traditional mouse with an optic sensor that scans your desktop 1500 times a second for pin point accuracy.

WebSearch Code: MSS576



MSS576

\$95

Microsoft Internet Keyboard

The Internet Keyboard gives you a high-quality design with tools and easy Web access to help you work more efficiently. Get online with push of a button, and check mail with another.

WebSearch Code: MSS264



MSS264

\$49

MPlayer3

MP3 is the new recording format taking the world by storm. Music is digitally stored, and the MP3 device reads the music data directly, without any mechanical motion taking place. The quality of reproduction is CD standard, and because there are no mechanical parts, the unit is extremely shock proof.

With the MPlayer3, music files are stored on exchangeable flash cards - MultiMediaCards. This enables you to increase available storage, and change the music simply by changing the card. You don't have to keep downloading each time you want to change the music. The cards are currently available in 16MB (approximately 20 min of music) and 32MB (approximately 40 min of music), and can be purchased separately. German made. Full version operating software (Win/Mac/Linux) included.



MPlayer3 Win/Mac + 32MB MPL001

\$389

WebSearch Code: MPL001

Princo CD-RW Media

Princo's CD Re-Writer Disc is fully compatible with any CD-RW writer.

The ability to re-write thousands of times means lower costs and fantastic re-usability.



PRI010

ONLY

\$5.99

WebSearch Code: PRI010

Kodak CD-R Media

Provides high performance, compatibility and a huge 650MB - that's equal to 450 floppies or 240,000 pages of hard copy!



KOD042

ONLY

\$2.70

WebSearch Code: KOD042



**PRICE
PLEDGE**
We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**
Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**
Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
* where applicable



**MASSIVE
RANGE**
We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**
Check our online
store at
www.iswh.com.au



**No.1
SERVICE**
As an International
Company we have won
many awards for products
and service that any
software mail-order
company



ADDRESS
Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**
Sales Lines open
8.30am 'til 6.00 pm (EST)
Monday to Friday
10.00am 'til 3.00 pm (EST)
Saturday



**TERMS &
CONDITIONS**
All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003



COMPAQ TOSHIBA



We offer a broad range of notebooks from HP, IBM, Toshiba and Compaq, plus a wide range of accessories and companion devices. Notebook prices and specifications change weekly, so check out our website at www.iswh.com.au/notebooks to get the best deals on brand name notebooks. Find it cheaper? Call us - we'll always try and beat the price!



Mitsubishi 15.1" TFT Monitor

- Thin Film Transistor Liquid Crystal Display panel with 15.1"/38.4cm viewable diagonal screen size providing excellent image quality
- High Contrast LCD panel - 300:1 contrast ratio
- Full colour display with a maximum of 16.7 million colours with dithering
- Flicker free XGA (1024 x 768 pixels @ 75Hz) resolution
- Automatic image adjustment for easy installation
- 3 year on-site warranty supplied



**Full 3yr
on-site
warranty
for all Metro
Areas**



WebSearch Code: MIT015

MIT015

\$2149

Daewoo 15" Monitor



- 5188 FST Colour digital monitor
- 1280 x 1024 resolution (at 60Hz)
- 0.28mm dot pitch
- non glare anti static screen
- 20 mode memory
- 3 year warranty

* Actual Products may vary from illustrations shown

WebSearch Code: DAE003

DAE003

\$299

Daewoo 17" Monitor



- 17108 FST Colour digital monitor
- 1280 x 1024 resolution (at 60Hz)
- 0.28mm dot pitch
- non glare anti static screen
- 20 mode memory
- 3 year warranty

* Actual Products may vary from illustrations shown

WebSearch Code: DAE004

DAE004

\$519



Quantum *Spice up your PC with blistering performance and rock solid reliability!*

QUANTUM
8.4 GB only
\$235!



With today's PCs requiring more and more storage capacity, the obvious choice is the range of affordable hard drives from Quantum. These best selling drives offer outstanding value and performance that will make your PC come to life! The Quantum Fireball CX is the perfect hard disk drive for small to large businesses and home users. It delivers huge storage capacities up to 20.4 GB and performance with a 9.5 millisecond (ms) seek time. Plus, it provides superior reliability with Quantum's revolutionary Data Protection and Shock Protection Systems.

Drive	Model	Speed	AccessTime	Price	Code/WebSearch
Fireball CX 6.4 GB	QM306400CX-A	5400rpm	9.5ms	\$199	QUA170
Fireball CR 8.4GB	QM308400CR-A	5400rpm	9.5ms	\$235	QUA176
Fireball CX 13.0GB	QM313000CX-A	5400rpm	9.5ms	\$239	QUA177
Atlas IV 9.1 GB Ultra	QM309100KN-LW	7200rpm	6.9ms	\$579	QUA189
Atlas IV 9.1 GB Ultra	QM309100KN-SCA	7200rpm	6.9ms	\$579	QUA190
Atlas 10K 9.1 GB Ultra	QM318200KN-LW	7200rpm	5.0ms	\$815	QUA192
Atlas IV 18.2 GB Ultra	QM309100KN-LW	7200rpm	6.9ms	\$999	QUA191

FOR FURTHER INFORMATION, OR PRICING ON HARD DRIVES NOT FEATURED, PLEASE CALL OUR SALES TEAM ON 1300 300 003

REMEMBER: HARD DRIVE PRICES FLUCTUATE - CALL FOR LATEST PRICE

Compro Flat Panel Speakers

Compro Flat Panel Speakers with NXT technology. Super slim and light loudspeakers with awesome audio performance. The NXT advert is in keeping with the explosive advances in information technology. NXT is pre-eminent in applications where synchronicity between image and sound is important. Synchronicity between image and sound is important.

Features

- Compatible with any audio source DVD/CD/Cassette/Nintendo/Play Station/Sega
- NXT Flat panel technology
- Super slim and lightweight
- Magnetically shielded
- 20W rms power output subwoofer
- Frequency response 50Hz - 20KHz
- CE/GW compliance safety



AVAILABLE
IN BLACK
OR OFF-WHITE

Black Speakers
CMP020

\$99

Off-White Speakers
CMP014

\$99

WebSearch Code: CMP020
WebSearch Code: CMP014

Sound Quality with Style



Plantronics, the world leader in communications head-sets, introduces an exciting new line of PC headsets. The Plantronics PC headset product line delivers the ultimate in technical performance, comfort, durability, and style. Plantronics' full line of PC headsets is designed for use with all PC applications from speech recognition and video conferencing to game playing and Internet communication.

- Gaming/Multimedia Stereo Headset
- High-fidelity stereo speakers
- In-line controls for volume and microphone
- Lightweight, rugged design
- Comfortable circumaural earmuffs
- Elastomer-mounted boom for quick microphone adjustment



Light Weight Stereo Headset (LS1)

PLA049

\$99

WebSearch Code: PLA049

The New Range of Motherboards from MSI

MS-6163PRO - Intel 440 BX

- Designed for Intel PIII/PIII Slot1 Processor
- Free of jumper and DIP Switch
- No manual is needed for your CPU upgrade
- Multiple clock support up to 155MHz
- Adjustable CPU voltage
- Provides multi-sensors for detecting CPU, Systems, and HDD temperature
- Free PC Health Monitor, and Anti-Virus Software
- SPCI/2ISA/1AGP, ATX
- Y2K/PC99 Compliant



MSI001

\$199

MS-6178 - Intel 810

- Designed for Celeron 5370 processor
- Free of Jumper and DIP Switch
- No manual is needed for your CPU Upgrades
- Doctor D-LED
- PTI (Panel Link TV Out) Interface
- ATA33/66 Ready
- Free PC Health Mon. and Anti-Virus Software
- 3PCI/2DIMM/1AMR/1PTI, MATX
- Y2K/PC99 Compliant



MSI002

\$239

WebSearch Code: MSI002

MS-6182

- Designed for PIII/PIII Slot 1 processor
- Free of Jumper and DIP Switch
- High Performance 3D Graphics/Audio Integrated
- PTI (Panel Link TV Out) Interface
- ATA 33/66 Ready
- Free PC Health Mon. and Anti-Virus Software
- 6PCI/1SA/3DIMM/1AMR/1PTI, ATX
- Y2K/PC99 Compliant



MSI003

\$249

WebSearch Code: MSI003



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at
www.iswh.com.au



**No.1
SERVICE**

As an international
Company we have won
more awards for products
and services than any
software mail-order company



ADDRESS

Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Linear open
8.30am - 10.00 pm (EST)
Monday to Friday
10.00am - 10.00 pm (EST)
Saturday



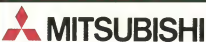
**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



**CHRISTMAS
SPECIAL**

EXPRESS ORDERLINE 1300 300 003



50X 50X 50X 50X!

50X CD-ROM

50 Speed CD-ROM Drive Hits the Market

This new product, in particular, is designed to optimise vibration and noise from high speed playing to ensure high performance and stability.

Features

- Interface - UDMA E-IDE ATAPI
- Data transfer rate - Up to 7.5Mbytes/sec @ 50X max
- Access time - 100ms
- Buffer size - 128 Kbytes
- Disc loading mechanism - Motorised tray-load
- Weight - 900 grams
- Warranty - 12 months
- Quiet operation
- Low disc vibration
- Multi-read compatible (CD-RW)
- CD Play button for software-free CD playback



WebSearch Code: MIT014

MIT014
\$99

Pioneer 6X DVD & 32X CD-ROM Drive

Includes Cyberlink Power DVD Software Decoder

PowerDVD

Pioneer again lead the way with the release of their new 6X DVD-ROM drive series. Offering blistering 6X DVD and 32X CD-ROM read performance combined with Pioneer's ultra-stable tray-load technology, the DVD103/113 series are simply the best available. From Pioneer, the leader in DVD.

Features

- High speed 6X DVD class, sustained data transfer rate of 8.1 Mbytes/sec!
- Reads Single and Dual Layer DVD-ROM, DVD-Video discs plus DVD-R, CD-ROM, CD-R and audio CDs
- Uses Pioneer's ultra-stable tray-loading disc technology
- Ultimate quality hardware from Pioneer, the leaders in DVD
- 2 Year Warranty
- Internal



WebSearch Code: PIO009

PIO009
\$199

DVD Pro-Kit with Microsoft Encarta DVD 99!

**FREE
ENCARTA**

The Pro-Kit DVD upgrade kit offers the complete multizone DVD playback solution for all Pentium PCI or faster PCs. Combining the best available DVD-ROM drive with the market leading DVD decoder card, the Pro-Kit DVD offers nothing but the best in hardware quality. Add to the kit Microsoft's Encarta 99 DVD Reference Suite and you have all you need to get started!

Features

- Super-fast 6X Pioneer slot-load DVD-ROM drive (32X CD-ROM)
- Play the latest DVD movies full screen on your PC at full frame rates in full compliance with hardware decoded Dolby AC3 audio!
- Multizone playback up to a maximum of 5 times
- Composite and S-video outputs built-in for display straight to a television
- Capable of reading all CD and DVD formats (not DVD-RAM)
- Bundled with Microsoft's Encarta 99 DVD Reference Suite: Includes MS Encarta Deluxe 99, Microsoft Virtual Globe 99 and Microsoft Bookshelf 99 all on 1 DVD-ROM!



WebSearch Code: PIO007

Internal
PIO007
\$475

Prelude! 1-2-1 CD Duplicator



You'll soon discover just how easy it is to make your own CDs with the touch of a button!

Verbatim Prelude! 121 Duplicating System is the perfect way to duplicate and distribute CD's from home or the office.

Place an original CD in the 32x CD reader drive, followed by a recordable CD in the 4x CD recorder drive after the system has read the contents. Press the button and presto! You've got a true copy without having to turn on your computer in less than 20 minutes! (Note: The smaller the CD you are copying, the faster the Prelude! 121 works).



WebSearch Code: VER087

VER087
\$2399

Verbatim Datalife Plus CD-R and CD-RW discs

Verbatim CD-R and CD-RW discs encompass the latest technology for superior performance. They feature a proprietary Metal AZO dye (which offers the best protection against sunlight), multi-speed recording, scratch-resistant, protective coating, a fully printable surface and across the board writer compatibility.

WebSearch Code: VER043
WebSearch Code: VER080
WebSearch Code: VER081



Single CD-RW
VER081
\$12.95

Single CD-R
VER043
\$3

10 Pack CD-R Media
VER080
\$25



HP CD-ReWriter Plus 9100i

Incredible - 38x 8x 4x!

Now the fastest, easiest, most reliable way to make your own CD's is 38 x 8 x 4. This is the top of the line, multimedia, multipurpose Internal IDE CD-RW (ReWritable) drive which supports Multi-Copy, to ensure all copies are identical to the original. The 9100i also supports 80 minute CD overburn.

- Easy installation, plugs straight into your IDE port, easily transferred between computers.
- Adaptec Direct CD & Easy CD Creator makes it easy to write data, photo, audio and video files to a CD.
- HP Disaster Recovery quickly and easily restores your hard drive files and operating system in minutes.
- HP Fast Format writes or formats CD-RW's in less than 5 minutes.

ISWH Christmas Bonus Pack

- 10 x HP CD-R discs
- 1 x HP CD-RW disc
- HP CD Wallet
- HP Fast format
- HP Disaster Recovery
- CD-Labeler
- Corel Print Office
- eFax Filing Central
- Adaptec Easy CD Creator
- Adaptec DirectCD



**hp HEWLETT
PACKARD**
Expanding Possibilities



HPP048
\$639

WebSearch Code: HPP048

Kodak IDE CD-ReWriter Kit

Features

- 4x Writable, 4x ReWritable, 24x Read
- Disc and track-at-once recording
- New WinOnCD 3.6
- Packet CD 3.0
- Gazo Personal Imaging Warehouse
- Video CD2.0 capable
- Full in-box solution
- Audio Features
 - Includes 5m long HiFi connection cable
 - record to hard drive from any audio source
 - de-click, EQ adjust, insert track breaks, etc.
 - MP3 to CD Digital Audio



KOD049
\$449

WebSearch Code: KOD049

Verbatim Smart and Friendly CD SpeedWriter Plus 4224 Internal IDE

The Smart and Friendly CD SpeedWriter Plus is a 4x Write, 2x ReWrite, 24x Playback CD-Recorder with a plentiful 2MB buffer, capable of creating a full 650MB CD in as little as 17 minutes. It is ideal for music and audio storage, data archiving and backup, disaster recovery, digital imaging and a whole range of multimedia applications.

Software Suite includes:

- Adaptec Easy CD Creator Standard
- PowerQuest Drive Image
- Diamond Cut EnhanceCDR
- Sonic Foundry CD Architect
- Sonic Foundry Sound Forge XP
- MediaPath MediaAgent
- ECI Disc Inspector Pro
- Smart & Friendly CD Consultant



INCLUDES
FREE SOFTWARE
VALUED AT OVER
\$1400

IDE (Internal)
VER079
\$419

SCSI (External)
VER082
\$799

WebSearch Code: VER079
WebSearch Code: VER082

CD-ReWriter Plus 7510e

Easy Installation 6x 2x 2x

- Includes all cables & accessories
- External / Portable CD-RW drive
- Connect to your PC or Laptop

ISWH Christmas Bonus Pack:

- 5 x HP CD-R Disc's
- 1 x HP CD-RW Disc
- HP Fast Format
- HP Simple Trax
- HP Disaster Recovery
- ACID Music Creator
- Adaptec DirectCD
- Adaptec EasyCD Creator



HPP045
\$555

WebSearch Code: HPP045

Easy CD Creator 4 Deluxe

Easy CD Creator 4 Deluxe goes way beyond the software that came with your CD-Recorder - it's the easiest way to put your world on CD! Now it's easier than ever to create audio and backup CDs, access music on the internet, fine tune your music tracks, enhance photos and videos like a pro, and create your own CD labels. Easy CD Creator 4 Deluxe is the premium, all-in-one solution for CD-recording. And when it comes to saving precious memories or backing up important data, there's nothing better than a virtually indestructible CD!

New Features:

- Take Two lets you quickly, economically and safely store vital business information on CD. Supports both CD-R and CD-RW
- MP3 Music Support to access, purchase and download music from popular music web sites. Includes free authorized MP3 songs
- CD Guide is the easy-to-use interface that walks you through the recording process
- Web Checkup enables you to download the latest Adaptec software program files
- MGI VideoWave II SE for adding special effects, correct color and more
- Jewel Case Creator - includes new professionally designed themes
- CD labeler and blank labels ink jet and laser printers included



ADA074
\$119

WebSearch Code: ADA074



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
* where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at
www.iswh.com.au



**No.1
SERVICE**

As an international
company we have won
more awards for products
and service than any
software mail-order
company



ADDRESS

Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Live open
9.30am - 6.00pm (EST) &
Monday to Friday
10.00am - 3.00pm (EST)
Saturday



**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003

iomega zipCD Internal E-IDE CD-RW Drive

The lean, mean cloning machine - 4x Record, 4x Write, and 24 Max Read!

The Iomega ZipCD drive is easy to use - just point and click. Use it to back up and archive important files, or share multimedia presentations, photos, and Internet downloads. Plus, your ZipCD drive allows you to record and erase your original music on CDs and play them in your home or car stereo. With bundled software to enhance performance, the ZipCD drive is a complete solution.

Bundled Software

- Whether you want to start or enhance your digital photo library or protect your daily work files on dependable ZipCD media, the software suite included with the ZipCD drive will meet your needs.
- Adobe Photoshop Limited Edition: Touch up, enhance, and energize your images.
 - Adaptec Easy CD Creator: Create your own CDs.
 - Adaptec DirectCD: Drag and drop files to CD.
 - Iomega Quik Sync: Keep your important files safe automatically.
 - Avery Media Software: Special edition software for formatting and printing CD labels.



Note: Please confirm system requirements before purchasing

WebSearch Code: IOM121

IOM121

\$399

**We sell blank CD-R
Discs for only \$2.70 each**



KODAK 74 MIN CD-R

KOD042	Kodak CD-R 74 min 8x KSP	\$2.70
KOD043	Kodak CD-R 74 min 8x NSP	\$2.70

Also Available:

PRI010	Princo CD-RW Media	\$5.99
PRI006	Princo CD-R 80Min	\$5.95
HPD024	HP CD-R 650MB Single	\$3.90
HWP252	HP CD-RW Single	\$29.00
SONY18	Sony CD-R 650MB 74Min 10-PK	\$36.99
SONY33	Sony 3.5 DSHD Disk 10-PK	\$8.50

IOM030	Zip 100MB Disks PC 10-PK	\$185
IOM086	Zip 100MB Disk Mac 1-PK	\$25
IOM074	Zip 100MB Disks Mac 10-PK	\$189
IOM085	Zip 100MB Disk PC 1-PK	\$25
IOM099	Zip 100MB Gigacolor Disks 2-PK	\$39
IOM102	Zip 250MB Disks PC 10-PK	\$319
IOM103	Zip 250MB Disk PC 1-PK	\$35
IOM112	Zip Drive 6 Disk Wallet	\$29

Compro CDRW 4420-NB

The Compro CDRW 4420-NB is one of the world's first CD re-writers with CD recording, rewriting and reading function all in a slim 23mm height housing. Notebook users can now enjoy the convenience of CD writing and rewriting all on one single drive. Available for both USB and PCMCIA ports.

Users will enjoy the unsurpassed performance of 4x CD writing and rewriting as well as 20x CD reading.

Bundled with

- Easy CD Creator
- Direct CD software
- Compro 16 CD holder
- Sample CD-Recordable Media
- Sample CD-Re-Writable Media

WebSearch Code: CMP015
WebSearch Code: CMP016

**ULTRASLIM
DESIGN
PERFECT
FOR
NOTEBOOK
USERS**



PCMCIA
CMP016

\$959

USB
CMP015

\$959

LaBelle CD Labeller

Give your CDs the professional touch. This clever yet simple labeller lets you put neat and professional looking labels on to your CDs. Labels are available for both inkjet and laser printers.

Labelling a floppy disk is one thing, however, labelling a CD-ROM is quite another. Since the label on a CD must be placed exactly in the middle and may not overlap anywhere, you can either squint your eyes and hope for the best, or you can entrust the exact positioning to LaBelle.

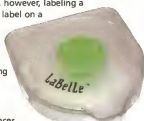
Modern CD-ROM drives with increasingly higher rotation speeds demand smaller and smaller tolerances. Through precise label centering, the Swiss made LaBelle insures that the CD spins evenly and thus data readability is not corrupted.

- CD label applicator
- CD Software (PC/Mac)
- CD Labels (1440 dpi optimised)
- Inlay Cards

...simply the best labelling system on the market.

For a full range of labels visit our website at www.iswh.com.au

WebSearch Code: LAB006
WebSearch Code: LAB008
WebSearch Code: LAB012



LaBelle Starter Kit
LAB006

\$45

JetGloss 20 Label Pack
LAB008

\$25

JetColour Pro 20 Label Pack
LAB012

\$22

LAB013	LaBelle Jetgloss CD Labels 50 Pack	\$55
LAB014	LaBelle Jetlaser CD Labels 100 Pack	\$69
IOM097	Jaz 2GB Disk PC 1-PK	\$199
IOM066	Jaz 2GB Disk Mac 1-PK	\$199
IOM089	Jaz 2GB Disks PC 3-PK	\$359
IOM078	Jaz 2GB Disks Mac 3-PK	\$379
IOM106	Click! Disks 2 Pack	\$65
IOM107	Click! Disks 10 Pack	\$175



iomega Zip250 USB

The Latest Super Floppy solution from iomega

The latest addition to the Zip product line, the Zip 250 USB drive, offers an ultra-thin mobile design that meets the high-capacity storage needs for both PC and Mac users. At 2.5cm thick and weighing just over 400g, the Zip 250 USB drive can accompany the most demanding mobile computer user. Connect the drive conveniently via the USB port, or for ultimate versatility, the Zip 250 USB/PC card drive version can be connected via USB port or the PCMCIA slot of your mobile computer.

- Compatible with USB-enabled PC and Macintosh systems.
- Requires MacOS 8.1 or higher, or Windows 95, Windows 98, or Windows NT 4.0.
- Zip 250 USB/PC card drive can connect via PCMCIA interface with Windows 95 or Windows 98.
- PCMCIA connection is host powered and does not require an external power supply.
- Hot plug and play, except Windows NT 4.0.
- Up to 900KB/sec transfer rate.
- Includes iomegaWare 2.1 with the latest software advancements from iomega including QuikSync instant backup utility.
- Compatible with both 100MB and 250MB Zip disks.
- Compatible with more than 150 million 100MB Zip disks shipped to date.

Now
COMES WITH 2
250MB Zip Disk
TO HELP YOU GET
STARTED*



*while stocks last. Offer valid for
IOM109 and IOM108 only.

WebSearch Code: IOM108

WebSearch Code: IOM109

Also available at a new low price
IOM100 Zip 250 Parallel.....\$289
IOM101 Zip 250 SCSI.....\$289

Zip 250 USB/PC Card
IOM109
\$399

Zip 250 USB
IOM108
\$345

iomega Zip Starter Kits

Parallel port 100MB Zip drive

- back up your hard drive
- take your stuff with you
- use it like a hard drive

- 4 genuine multicoloured 100MB Zip disks
- each disk holds up to 70 floppies
- great for multimedia
- colours help organise

WebSearch Code: IOM096

IOM096
\$249

iomega 100MB Zip USB

The perfect companion for iMac & PCs with windows 98

- Easy to connect - just plug it into your USB port, and you're ready to go
- Hot swappable - switch with other USB devices without turning off your computer
- Compatible with 100MB* Zip disks - over 100 million disks sold
- Reliable - use it like your hard drive - save your files and run your software
- Fast, unlimited capacity - add 100MB* at a time

WebSearch Code: IOM098

IOM098
\$245

iomega Click! PC Card Drive

The compact, go-anywhere storage solution

A lightweight and highly mobile removable storage drive, the Click! PC Card Drive fits into the PC card slot of most notebook computers. It comes ready to run and with no extra cables or batteries, is easy to install and use. Click! disks hold an amazing 40MB of information and provide the ideal low-cost, high-capacity removable storage solution for storing data on the run. The Click! PC Card drive also includes iomega's productivity enhancing QuikSync and Copy Machine which enable users to develop a complete and reliable backup and storage solution.



WebSearch Code: IOM120

IOM120
\$365

You could WIN a Hayman Island holiday

With any purchase of an iomega drive between 1 November and 31 December 1999, you will receive a FREE beach chamois and are entered into the draw to WIN a trip for two to Hayman Island for 7 days.

For more details, Call for the full terms and conditions.

jaz 2GB Who said size doesn't matter?

When it comes to multimedia, the super fast, extremely vast personal storage drive from iomega thinks it does. Jaz drives and disks offer the ideal solution for storing, transporting and playing multimedia applications. You can pack up to 2 gigabytes on each disk, and there is no limit to the number of disks you can use. Speedy access times and rapid transfer rate mean you can quickly and easily move files around. The Jaz drive can handle even the most demanding users, including full-screen full motion videos!



WebSearch Code: IOM083
WebSearch Code: IOM082

iomega Jaz 2GB (Ext)
IOM083
\$645

iomega Jaz 2GB (Int)
IOM082
\$679



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at

www.iswf.com.au



**No.1
SERVICE**

As an international
company we have won
many awards for products
and services that our
customers and order
company



Address

Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**Opening
Hours**

Sales Lines open
8.30am 'til 6.00pm (EST)
Monday to Friday
10.00am 'til 1.00pm (EST)
Saturday



**Terms &
Conditions**

All prices include Sales
Tax. Prices subject to
change, see page 16 for
terms and conditions.

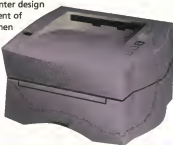


EXPRESS ORDERLINE 1300 300 003

KYOCERA FS-680

All lasers are not created equally!

Kyocera has re-defined laser printer design to avoid the frequent replacement of the drum and the developer. When a Kyocera ECOSYS printer runs out of toner, that's all you replace. It not only costs less, it causes less harm to the environment too.



Print speed	8ppm
Resolution	600dpi enhanced to 2400dpi
Standard emulations	HP PCL 5e
Processor	50 MHz Power PC
Standard / maximum memory	4 / 36Mb
Standard paper input	150-sheet cassette
Maximum paper input	400 sheets, 2 sources
Consumer yield	3,000 A4 pages @ 5% coverage
Duty cycle	5,000 pages / month

KY0016

\$585

WebSearch Code: KY0016

Lexmark Z31 Color Jetprinter



The Lexmark Z31 is part of the new Lexmark Z Series Color Jetprinters, a range of versatile high performance printers perfectly suited for anyone demanding the highest quality possible from a colour inkjet printer.

Features:

- Unique laser-crafted printheads offer 1200 x 1200dpi on all media types
- Accu-Feed - provides perfect paper alignment, virtually eliminating frustrating paper jams.
- Lightning fast print speeds - up to 8ppm black, up to 3.5ppm colour
- Optional Photo Cartridge
- LexExpress Warranty - Lexmark customers receive access to a free Technical Support Hotline and Internet site during the 1 year warranty period.



LEX119

\$325

WebSearch Code: LEX119

GET THE RIGHT INK CARTRIDGES FOR YOUR PRINTER

If this is your printer:

Then this is your ink cartridge:

This is our code:

This is your price:

Kyocera FS-680	Toner - TK16	KY0020	\$85
Lexmark Z31	Black - 12A1970	LEX105	\$65
	Colour - 12A1980	LEX104	\$75
Canon BJC-6000	Black - BC30	CAN103	\$69
	Colour - BC31	CAN104	\$79
	Photo - BC32	CAN110	\$85
Canon BJC-80	Black - BC10	CAN054	\$59
	Colour - BC11E	CAN053	\$75
Canon LBP800	Toner - EP22CART	CAN112	\$99
Canon BJC-2000SP	Black - BC20	CAN024	\$55
	Colour - BC21E	CAN015	\$79
Canon BJC-2655P	Black - BC02	CAN063	\$49
	Colour - BC03	CAN236	\$45
	Photo - BC06	CAN007	\$55
	Fluoro - BC09F	CAN111	\$75

IF YOU DON'T SEE WHAT YOU NEED ABOVE, CONTACT OUR SALES TEAM ON 1300 300 003 FOR A FULL RANGE OF INK CARTRIDGES FOR ALL MAJOR PRINTER BRANDS

**Don't forget to check
if you need a cable
for your printer**

CAB016	1.8M Bi-Directional Parallel Printer Cable	\$14.95
CAB035	1.8M USB Printer Cable	\$14.95

LEX110	Lexmark 1100 Color Jetprinter	\$149
LEX575	Lexmark 3200 Color Jetprinter	\$269
LEX111	Lexmark Optra E310	\$839
KY0017	Kyocera FS-1700 Laser	\$1639
CAN218	Canon BJC-4650 (A3)	\$409
CAN100	Canon BJC-7100	\$499
CAN225	Canon BJC-5500	\$1245
CAN081	Canon BJC80 Scanner Head	\$135



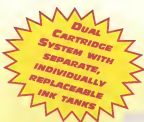
Canon BJC-6000

Excellent all-purpose printer

The new Canon BJC-6000 delivers optimum balance between speed and cost performance and true photo-quality results.

Features:

- Print speeds up to 8ppm in black text and 5ppm in colour (bi-directional).
- High Resolution output up to 1440dpi (8C-32).
- Revolutionary see through ink tanks (8C-31). An optical ink level sensor warns the user when inks are low.
- New Pigment black ink for faster, sharper, smoother black text.
- Using the optional USB interface cable, the user can easily connect to USB compatible Windows 98, iMac and Mac G3 computers.
- Paper Size - A4, A4+, B5, A5, Letter, Letter+, Legal, Envelopes (DL size or Commercial 10) Canon 4"x6" Glossy Photo Cards.
- Media Type - Plain Paper, Envelopes, Transparency Film, Bubble Jet Paper, Brilliant White Paper, High Resolution Paper, Glossy Photo Paper, High Gloss Photo Film, Back Print Film, Fabric Sheet, T-Shirt Transfer Paper, Glossy Photo Cards, Banner Paper.
- Compatible with Microsoft Windows, 3.1x/Windows 95/Windows 98/Microsoft Windows NT 4.0.



CAN249

\$475

WebSearch Code: CAN249

PRINTERS & CONSUMABLES

Canon BJC-80

Uses half your briefcase not half your desktop!

- Drop Modulation Technology™ - the dual drop size breakthrough that produces smoother colour gradations.
- Office laser quality finish and B&W speeds up to 4.5 pages per minute with dedicated black cartridge.
- Better Internet Images with Image Optimiser.
- Windows 95 compatible IrDA infrared port for cable-less communications.
- Optional scanner head for colour graphics, OCR and faxing.
- Fits in half a briefcase, weighs only 1.4kg!
- International warranty included with purchase.



CAN001

\$335

WebSearch Code: CAN001

Canon LBP800

Big laser performance on a personal laser budget

The new affordable laser beam printer from Canon features a compact desktop design plus:

- Convenient face up or face down paper delivery, with overlay function.
- Resolutions of 300 x 300dpi, 600 x 600dpi, and 2,400dpi with text and line smoothing.
- High speed - up to 8ppm!
- 125 page Multipurpose Tray and single sheet Manual Feed Slot.
- Comprehensive job control via Canon including Match Paper Size, Multipage per Sheet, Collate, Form Overlay, Custom Paper Size, Toner Saver and Automatic Image Refinement modes.
- Win 95, 98 and NT 4.0 drivers available.



New high end version also available
Canon LBP 1760
CAN259

\$1729

CAN258

\$589

WebSearch Code: CAN258
WebSearch Code: CAN259

Canon BJC 2000SP

Super Economy. Super Performance

- Compact new desktop design for printing ease.
- IEEE 1284 PiPort.
- High-quality photos and text with super economy.
- 720 x 360dpi resolution produces exceptional image quality in regular colour mode.
- Advanced image processing with Photo Optimiser mode automatically corrects image colour, exposure and saturation for the printer, without affecting the original image file.
- Auto image enhancement for low-resolution graphics dramatically improves print quality, especially at larger print sizes.
- Instant conversion into a full-colour, sheetfed scanner by simply popping in the optional Scanner Cartridge IS-22.
- Accepts a full range of media for every application.



Optional Scanner Attachment
CAN099

\$139

CAN252

\$169

WebSearch Code: CAN252

Canon BJC 265SP

Advanced driver features & photo quality, at a budget price

- Super economy super performance Bubble Jet printer.
- Budget priced with advanced driver features and photo-quality.
- Image optimiser setting reduces jagged edges & faded colours.
- Using the appropriate black or colour cartridge, produce up to 2400 pages in black & white & 400 pages in colour.
- Using optional BC-06 PhotoRealism colour cartridge photo quality images are easily achieved.
- Use appropriate software to print banners for all occasions.
- Print at up to 4 pages per minute for black text.



CAN257

\$129

WebSearch Code: CAN257



We will not be beaten on price!
We cut prices not corners.



Make sure to ask for your free gift when ordering.



Full range of delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



We aim to stock at least 95% of ALL the items we sell



Check our online store at
www.iswh.com.au



As an international company we have won more awards for products and service than any software mail-order company



Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales 2015



Sales Lines open
8.30am - 6.00 pm (EST)
Monday to Friday
10.00am - 3.00 pm (EST)
Saturday



All prices include Sales Tax. Prices subject to change, see page 6 for terms and conditions.



EXPRESS ORDERLINE 1300 300 003

HP DeskJet 810C

HP's brilliant photo-quality colour printer at the right price

The HP DeskJet 810C makes everything you print look great, even on plain paper. With HP's RealLife Imaging System, brilliant photo-quality colour printing is easy. Built-in ColorSmart II gives you perfect colour automatically, so what you see on screen is what you get.



Features:

- prints up to 6.5 pages per minute black, 3 pages per minute colour
- resolution 600dpi black, HP PhotoRet II colour
- easy setup and operation provide hassle-free printing
- compact design and quiet operation ideal for small workspaces
- compatible with Windows NT 4.0, 98, 95, 3.1x and MS DOS applications
- Parallel and USB connectivity



Expanding Possibilities

HWP378

\$345

WebSearch Code: HWP378

HP DeskJet 970Cxi

The premier photo-quality printer for busy business professionals who take their image very seriously

The HP DeskJet 970Cxi delivers stunning print quality, speed and reliability in one amazing printer. More than a small step up, 970Cxi represents a significant leap forward in inkjet imaging technology, performance and ease-of-use.



Features:

- Stunning photo-quality images with PhotoRet 3 HP Colour Layering Technology
- 2400 x 1200dpi mode included*
- Print speed up to 12ppm black, 10ppm colour
- Network-capable with optional JetDirect print server
- Automatic two-sided printing and print cancel button save time and paper
- Helpful low-ink indicator ensure you never run out of ink while printing
- IEEE 1284 - Centronics parallel compatible; USB (Win 98 and USB-Connect Mac)

* using photo paper



Expanding Possibilities

HWP413

\$775

WebSearch Code: HWP413

GET THE RIGHT INK CARTRIDGES FOR YOUR PRINTER

If this is your printer: Then this is your ink cartridge: This is our code: This is your price:

HP DeskJet 810C	Black - C6615A Economy Tri-colour - C1823G	HPI027 HPI023	\$55 \$49
HP DeskJet 970Cxi	Large Black - S1645A Tri-colour - C6578DA	AUC122 HPI026	\$59 \$69
EPSON Stylus Color 760	Black - S020189 Colour - S020191	EP5333 EP5335	\$45 \$45
EPSON Stylus Photo 1200	Black - S020187 Colour - T001011	EP5334 EP5374	\$39 \$65
EPSON Stylus Color 900	Black - T003011 Colour - T005011	EP5352 EP5353	\$55 \$65
EPSON Stylus Photo 700	Black - S020093 Colour - S020110	EP5069 EP5145	\$39 \$45
EPSON Stylus Color 460	Black - S020187 Colour - S020191	EP5334 EP5335	\$39 \$45

IF YOU DON'T SEE WHAT YOU NEED ABOVE, CONTACT OUR SALES TEAM ON 1300 300 003 FOR A FULL RANGE OF INK CARTRIDGES FOR ALL MAJOR PRINTER BRANDS

Don't forget to check if you need a cable for your printer

CAB016	1.8M Bi-Directional Parallel Printer Cable	\$14.95	HWP405	HP DeskJet 610C	\$249
CAB035	1.8M USB Printer Cable	\$14.95	HWP355	HP DeskJet 880C	\$479
			HWP345	HP DeskJet 895Cxi	\$629
			HPP019	HP DeskJet 1120C	\$785
			HWP257	HP LaserJet 1100	\$789
			HWP258	HP LaserJet 1100A	\$925
			HWP209	HP OfficeJet 635	\$665
			HWP382	HP OfficeJet 725	\$795



EPSON Stylus Color 760

Superb performance for the advanced home and small business user.

The new EPSON Stylus Color 760 incorporates the latest state-of-the-art technology to ensure it is right at home meeting the demands of the advanced home and office user. By combining EPSON's Advanced Variable-Sized Droplet technology and Ultra Micro Dots with EPSON's award winning PerfectPicture Imaging System, the EPSON Stylus Color 760 has created a new standard of image quality for the SOHO environment. It's the ideal solution for printing business presentations, desktop publishing projects and digital photographs.

Features:

- Produces true 1440 x 720 dpi printouts - even on plain paper, which means you can include eye-catching colour charts and graphics in all printed material.
- Increased printable area - you can now set the margin to 3mm on all four sides of an A4 document - perfect when printing enlargements of your favourite photo.
- Improved new user interface - includes a full function on-screen Status Monitor which makes it easy to check ink levels and paper availability at a glance.
- PhotoEnhance 4 function - analyses your print job and makes brightness, contrast and colour adjustments automatically WITHOUT affecting the original file. Basic improvements over previous versions include:
 1. Five tone variations (monochrome, normal, hard, vivid and sepia) means you can produce sepia-style prints.
 2. Additional effects (sharpness, soft focus, canvas and parchment) have been included. For example, for a final output to look like it's been printed on canvas, choose the canvas option.
- Option to enhance images manually.
- 4 picolitre Ultra Micro Dot printing - produces images that are so fine-grained, they are virtually indistinguishable from photographs.
- PC and Macintosh compatible, and offers the advantages of USB connectivity.



EPS177

\$535

PRINTERS & CONSUMABLES

WebSearch Code: EPS177

EPSON Stylus Photo 1200

The ultimate A3+ photo reproduction quality inkjet printer for graphic artists & professional photographers

The STYLUS PHOTO 1200 works as an artist would, using large ink dots for solid colours and smaller-sized dots for blends and gradations. This makes colour accuracy and shade clarity high. In addition, print speeds are not compromised even with the superior print quality.

Key Features:

- delivers 1440dpi, full-blend A3 prints with ink droplets invisible to the naked eye
- handles paper sizes from 4 x 6" to A3+ (329 x 483mm)
- supports Windows 95, 98, NT 4.0, Mac and iMac systems
- includes parallel, Mac, serial and USB interfaces



EPS344

\$929

WebSearch Code: EPS344

EPSON Stylus Color 900

The fastest inkjet printer in its class

The EPSON Stylus Color 900 is ideal for the business environment, catering for different business needs such as black text, colour presentations and graphs. The combination of printing technologies ensure it is a high-speed, high-image quality printer, printing at 12ppm - an amazing one page every five seconds! It also offers flexible connectivity solutions, including USB for Windows 98 and iMac's, and Mac G3.

Key Features

- EPSON's 1440dpi x 720dpi high quality printing
- Fully networkable with Ethernet 10/100 BaseT
- High capacity ink cartridges
- 3 pl droplet size - smallest dot size in the market!



EPS176

\$775

WebSearch Code: EPS176

EPSON Stylus Photo 700

A4 Photo Reproduction Quality at home

Introducing the first Photo Reproduction Quality printer for the home. Combining the superior performance of EPSON's PerfectPicture Imaging System and industry-leading 1440 dpi resolution, this new printer offers the highest image quality of any home-use inkjet printer available today. What's more, it's ability to deliver both photographic colour and black text printing makes it ideal for ALL your home printing needs.

- 6 colour ink formulation straight out of the box
- EPSON's 1440 dpi x 720 dpi photo quality printing
- 12mth Warranty with upgrade to 3yrs Warranty



EPS312

\$415

WebSearch Code: EPS312

EPSON Stylus Color 460

The perfect introduction to colour printing for the home user

Key Features

- 720 x 720dpi, with EPSON's PerfectPicture Imaging System - creates picture-perfect images and clear sharp text every time
- PhotoEnhance 4 technology - analyses digital images and enhances them for the best final output
- Poster Tiling function - divides an image and prints across A4 multi-pages to join to make a poster
- Automatic Mode - adjusts colour and print quality automatically to achieve optimum results
- Printer driver software for MS Window 95/98/NT4.0
- On-screen status monitor - confirms ink levels and printer status at a glance
- Easy installation and set-up



EPS388

\$255

WebSearch Code: EPS388



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
* where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at

www.iswh.com.au



**No.1
SERVICE**

As an International
Company we have won
more awards for products
and services than any
software mail-order
company



ADDRESS

Unit 13 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Lines open
8.30am - 10.00pm (EST) &
Monday to Friday
10.00am - 10.30pm (EST)
Saturday



**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003

Astra 2000U

The Smarter Colour Scanner That Makes Scanning Simple

The UMAX Astra 2000U provides an ideal scanning solution for all of your photos and documents. It's never been easier to add text to brochures, flyers, web pages and presentations.

The Astra 2000U provides support for both Windows 98 and Macintosh (including iMac) systems, that support the USB interface.

Set up of the scanner simply involves plugging in and installing the software

- Optical Resolution - 1200 x 600dpi
- Maximum Resolution - 9600 x 9600dpi
- Colour Scan Method - Single Pass Colour CCD
- Maximum Scan Area - 216 x 297mm
- Colour Mode - 36 bit
- Hardware Interface - USB
- Bundled Software - VistaScan with MagicMatch
- Prestol PageManager BE
- Adobe PhotoDeluxe
- UMAX Copy Utility
- Caere OmniPage L.E.
- Recognita Standard OCR



WebSearch Code: UMA024

UMA024
\$215

EPSON Perfection 610 USB

An entry level scanner ideal for the home

SO and small business user. The Perfection 610 produces smooth edges on line art, crisp and dark print, true colours on photos and subtle shadings plus, it allows you to scan at the touch of a button! Simply press the 'start' button on the scanner and the scanner launches the program and loads the image. Capture virtually any image you can find, and turn it into something truly unique. For the home user, this can be professional-looking greeting cards and calendars that showcase personal photos. While for business users, a strategically placed graphic will enhance your report or presentation immeasurably.

Features:

- 36-bit colour depth, 12 bit greyscale
- 600x1200dpi optical resolution
- 600x2400dpi max hardware resolution
- 9600dpi enhanced resolution
- Platform support for MS Win 98, iMac, Power Mac G3
- A4 letter scan size

Bundled with everything you need to start scanning straight away.

Including:

- NewSoft Prestol PageManager - for one-button scanning
- Adobe PhotoDeluxe - for image touch-ups and photo processing
- EPSON PersonalCopy - lets users instantly turn scans into colour copies*
- Adobe Acrobat Reader 4.0
- EPSON Twinin



WebSearch Code: EPS387

EPS387
\$315

UMA014	UMAX Astra 1220P (Parallel)	.....	\$135
UMA015	UMAX Astra 1220S (SCSI)	.....	\$389
UMA021	UMAX Transparency Adaptor	.....	\$249
HWP339	HP PhotoSmart S20 Scanner	.....	\$949
PRO517	Microtek ScanMaker 9600XL	.....	\$3369
OMN019	OmniPage Pro 10 Upgrade (OEM)	.....	\$179
XERO05	Xerox Paxis Pro 3.0	.....	\$209
XERO07	Xerox TextBridge Pro 98	.....	\$49

Astra 2100U

The Smarter Single Touch Scanning Solution

The UMAX Astra 2100U provides an ideal scanning solution for all of your photos and documents. It's never been easier to add text to brochures, flyers, web pages and presentations. One Click: Scan, Copy and E-mail or OCR for fast results.

The Astra 2100U offers an easy connection with a Universal Serial Bus Interface, the latest advance in scanner and peripheral technology! Built with a 36-bit colour CCD plus BET, the Astra 2100U captures an amazing 68.7 billion colours to bring all your images to life.

With a USB interface, setting up a scanner has never been easier, simply plug in and install the software

- Optical Resolution - 1200 x 600dpi
- Maximum Resolution - 9600 x 9600dpi
- Colour Scan Method - Single Pass Colour CCD
- Maximum Scan Area - 216 x 297mm
- Colour Mode - 36 bit
- Hardware Interface - USB
- Bundled Software - VistaScan with MagicMatch
- Prestol PageManager BE
- Adobe PhotoDeluxe
- UMAX Copy Utility
- Caere OmniPage L.E.
- Recognita Standard OCR



WebSearch Code: UMA025

UMA025
\$299

Canon FB630U

The Easy-to-Use USB Colour Scanner

With the new Canon FB630U Scanner, not only do you get the performance and convenience of USB connectivity, you can copy, fax or email at the press of a button. The CanoScan Toolbox software lets you copy documents, and then send the data straight to your printer, email software or fax software. What could be easier?



Bundled software includes:

- OmniPage LE 5.1
- Super-slim design - only 39mm high!
- Canon CanoCraft Copier 3.7
- Canon Mac Plugin 3.1
- CanoScan Toolbox
- Mac Adobe PhotoDelux 2.0

Features:

- 600 x 1200dpi resolution
- Scanning depth of 36 bit
- Full iMac and Mac G3 compatibility, as well as Windows 98
- Ulead PhotoExpress 2.0

WebSearch Code: CAN256

CAN256
\$225

CAN254	Canon FB630P Scanner	.....	\$189
CAN253	Canon FB330P Scanner	.....	\$139
UMA026	UMAX Astra 2400s+ (for PC)	.....	\$1249
UMA027	UMAX Astra 2400s+ (for MAC)	.....	\$1249
HPS034	HP ScanJet 4200C	.....	\$299
HPS035	HP ScanJet 6350C	.....	\$1149
HPS036	HP ScanJet 6390C	.....	\$185-None>9
EPS359	Epson GT 7000 USB Scanner	.....	\$399



MICROTEK ScanMaker X6

The Microtek ScanMaker X6 offers a sharper image, much higher resolution, superior colour accuracy and much better shadow detail compared to entry level scanners. A better scanner means you don't waste your time correcting every scan.

The SCSI version includes a genuine Adaptec 1505AE SCSI card which lets you daisy chain other external SCSI devices (e.g. SCSI Zip drive, tape drive, CD writer, slide scanner).

Software bundle includes: Adobe PhotoDeluxe, Ulead Photo Impact, Photo Assistant, OmniPage LE, Paper Master SE and ScanWizard!

Features:

- 4 times the definition of entry level scanners
- 1200 x 600dpi Optical
- 9,600dpi Interpolated
- A4 Size
- Zero Reflection Design
- Digital Photography Magazine Editors Choice
- Advanced Image Enhancer
- Digital Photo FX Magazine 4 1/2 / 5 "Delivers great result"
- Great bundled software
- Tri-linear CCD sensor array
- Dynamic range: 3:2
- Low Cost Transparency Option
- True 36 bit colour processing (1 pass)
- 720,000 dots measured per square inch!
- Very compact



pc world
BEST BUYS



SCANNERS

Transparency Adaptor
PRO524

\$179

SCSI
PRO523

\$385

USB
PRO033

\$355

WebSearch Code: PRO523
WebSearch Code: PRO033

HP ScanJet 3300C

The easiest to use home scanner for Windows 98

If you want an easy scanning solution, try the HP ScanJet 3300C colour scanner. Setup is a breeze with a Universal Serial Bus (USB) interface - just plug it in! Step-by-step instructions are quick and easy to follow. You can scan or copy at the touch of a button. And it's all from the number-one market leader in scanner technology.

Features:

- A4 Flatbed, one-pass colour and monochrome scanner
- 600dpi optical, 600 x 1200dpi hardware, 9600dpi enhanced
- 36-bit colour
- For PCs with USB and Microsoft Windows 98
- Convenient scan and copy buttons on the front
- HP Intelligent Scanning Technology delivers great results automatically

Includes:

- HP PrecisionScan LT - scanning software with OCR
- HP ScanJet Copy Utility
- Adobe PhotoDeluxe Home Edition - photo editing and creative projects software



HPS038

\$249

WebSearch Code: HPS038



Expanding Possibilities

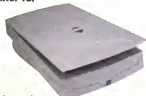
HP ScanJet 5200C

HP's fast, accurate, Internet-ready colour scanner for great results every time - no experience required

The HP ScanJet 5200C Business Series colour scanner delivers quality results up to three times faster than other scanners. One button starts any project!

Features:

- HP's Intelligent Scanning Technology delivers crisp, accurate images every time
- 600dpi optical, 9600dpi enhanced
- On-line e-mail and web task software
- USB and Parallel Port capable
- Preview outline by region type
- Auto page format retention
- Additional software - Adobe PhotoDeluxe Business Edition, valued at \$99
- Get photos, logos, drawings and text at optimal settings - in a single scan
- Preserve page format when you want to scan a whole document - and edit each element independently from one scan!
- Shrink or enlarge black-and-white drawings right in your application, with no worries about jagged effects!



WebSearch Code: HPS026



Expanding Possibilities

HPS026

\$465

MICROTEK ScanMaker 4

The MICROTEK ScanMaker 4 is both a professional quality flatbed scanner and a transparency scanner using Microtek's patented E.D.I.T. technology! Special film holders are used to scan slides & transparencies directly inside the scanner, thereby eliminating the loss of optical quality caused by glass. Compared to cheaper scanners, the ScanMaker 4 delivers better line art, better shadow detail and improved darty especially when scanning transparencies.

Features:

- Patented E.D.I.T. technology
- 36 bit colour
- 1200x600dpi optical
- 3 light sources
- Dynamic range 3.30
- Very Fast
- Includes Adaptec PCI SCSI

Bundled with professional software including:

- Silverfast
- ScanWizard Pro
- MSP ColorSync scanner profile software
- Photoshop 5 LE
- Omnipage LE OCR



pc world
BEST BUYS

PRO528

\$1329

WebSearch Code: PRO528

HP ScanJet 6300C

Rapid and easy professional colour scanning

Beat the odds with a desktop solution that helps you increase your productivity with lightning speed. Copy up to five pages per minute. Better yet, complete tasks four times faster. With the new HP ScanJet 6300C, you can become more effective at creating, incorporating, manipulating, sending and storing information than you've ever been before.

Features:

- A4 Flatbed, one-pass colour and monochrome scanner
- 1200dpi optical, 1200 x 2400dpi hardware, unlimited enhanced
- 36-bit colour
- Dual I/O: USB & optional SCSI
- Convenient scan, copy, e-mail, fax and file buttons on the front
- HP Intelligent Scanning Technology delivers great results automatically
- HP ScanJet Adapter lets you scan 35mm slides with ease



Also included: CD-ROMs with HP PrecisionScan Pro scanning software with OCR, HP PrecisionScan LAN, HP ScanJet Copy Utility, Electronic Help Tools Suite, Caere PageKeeper 3.0, Adobe PhotoDeluxe Business Edition 1.1, and Adobe PageMill 3.0 Web creation software.

WebSearch Code: HPS037



Expanding Possibilities

HPS037

\$995



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day
• International*
*where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at
www.iswh.com.au



**No.1
SERVICE**

As an International
Company we have won
many awards for products
and services that use any
software mail-order
company



ADDRESS

Unit 13 Bradford Estate
18 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Lines open
8.30am 'til 6.00 pm (EST)
Monday to Friday
10.00am 'til 3.00 pm (EST)
Saturday



**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003



More connected.

3COM U.S. Robotics 56K* Voice Faxmodem

Includes V.90 ITU 56K standard and x2 technology

Experience the Internet like never before! Grab graphics-rich Web pages, e-mail, huge data files, real-time sound and video faster, play intense games, get more done online. Compatible with both the V.90 ITU 56K standard and x2™ technology. Includes a CD-ROM jam-packed with great software for work and play. Visit www.3com.com/56k for a compatible Internet provider near you or call us on 1300 300 003.

Key Benefits:

- Number 1 selling modem in the world
- Brings you great Web sites faster
- Software upgradable for future enhancements



* Can receive up to 56Kbps. Actual speeds may vary.
Requires compatible phone line & server equipment.

WebSearch Code: USR104

USR104

\$219

3COM U.S. Robotics 56K* External Professional Message Modem

3Com's new range of 56Kbps V.90 standard desktop modems - the 3Com U.S. Robotics 56K V.90 External Professional Message Modem - enable users to meet all of their data, voice and message management needs with a single product, guaranteed to provide an enhanced and productive Internet experience.

Features:

- Faster Internet access
- Caller ID
- One-button access to voice messages
- Remote retrieval of voice messages through a dial-up connection
- Built-in high quality speakerphone
- Easier installation and use
- V.80 (video conferencing) capable
- Software upgradable for future enhancements
- Backed by a Lifetime Limited Warranty
- Valued-added Connections CD-ROM Software



* Can receive up to 56Kbps. Actual speeds may vary.
Requires compatible phone line & server equipment

WebSearch Code: USR105

USR105

\$279

Xircom RealPort Ethernet 10/100 + Modem 56

The RealPort Ethernet 10/100 + Modem 56 combines 10/100Mbps Ethernet, 56K modem, GSM, AMPS cellular and ISDN connectivity, in a single cable-free Integrated PC Card solution. GlobalACCESS features make it easy to connect to information from any location, anywhere in the world.

The revolutionary RealPort Integrated PC Card family solves the number one problem mobile users experience with PC

Cards today—lost, forgotten, or broken cable connectors

and broken pop-out jacks. Patented RealPort

Integrated PC Cards provide robust and reliable

communications by integrating

connectors directly into the card.

With RealPort Integrated PC Cards there are no cables and no hassles. Connecting to

information in the office or on the road has never been easier.



WebSearch Code: XIR048

XIR048

\$619

Xircom RealPort Modem 56

The Xircom RealPort Modem 56 offers mobile users high-speed 56K modem functionality in a robust Integrated PC Card with built-in connectors.

Features & Benefits:

- Integrated modem and telephone handset pass-through connectors provide reliable cable-free connectivity
- LEDs for status information at a glance
- Telephone handset pass-through allows receipt of incoming calls without disconnecting the modem cable
- Digital Shield protects modem from high-current digital phones lines
- Supports wide range of network operating systems including Windows 95/98 and Windows NT
- Wake-on-Ring reduces power consumption by detecting the ring of an incoming call and allowing receipt of information when the system is powered down
- Integrated PC Card reduces support calls, user down time and eliminates cable replacement



WebSearch Code: XIR064

XIR064

\$255

AVTEK Megamodem 2000

Data fax voice modem

• K56flex/V.90 Dual Mode

• Rockwell chipset

• Year 2000 OK

• Simple to set up and use

• Fax direct from your PC

• Voicemail messaging

• SVD + full duplex speakerphone

WebSearch Code: AVE002



AVE002

\$139



ABC Modems

ABC Internal Modem

For only \$79 you get this fast, simple to use, easy to install, best selling modem. The 56K V90 internal modem is perfect for users of all levels and ideal if you are limited for working space.

Features:

- Auto Select - 56K flex/V90
- Webstation software
- 100 hours Internet Starter Kit
- 1300 help desk
- 5 years warranty



ABC004
\$79

AusLink

WebSearch Code: ABC004

ABC External Modem

An excellent value external modem with exceptional quality and speed! The ABC 56K Flex V90 modem is an amazing offer at only \$99. This compact modem can be stored either horizontally or vertically for minimum use of space. All ABC modems come with a standard 5 year warranty.

Features:

- Auto select - 56K flex/V90
- 1300 help desk
- 5 years warranty
- Headset with microphone
- Webstation software
- 100 hours Internet Starter kit



ABC003
\$99

AusLink

WebSearch Code: ABC003

ABC PC Card PCMCIA Modem

Easy to set up. Easy to use. Easy as ABC

- Dual mode 56K flex/V90
- Low Power Consumption
- Webstation software
- 1300 help desk
- 5 years warranty
- 100 hours Internet Starter Kit
- Able to work with notebooks using popular operating systems such as Windows 3.1, 95 & 98
- Global Compatibility
- Green Mode



ABC005
\$159

AusLink

WebSearch Code: ABC005

WaveSP 56

The fully featured 56,000bps modem!

Includes:

- High speed data transmission at 56,000bps (v.90 standard)
- Microsoft Internet Explorer for Internet surfing & Web site construction
- Ultra connect for faster connections and downloads
- Simultaneous voice & data (SVD) transmission
- Full duplex speakerphone (hands free telephone)
- Fax transmission at 14,400bps
- Fully featured smart answerphone with multiple voicemail boxes
- A radical new shape for optimum audio performance
- The best new games

\$30 CASHBACK*

* Limited Offer, ends 31st December 1999. Call for details.



Banksia

BAN003

\$219

WebSearch Code: BAN003

D-Link DFM-560i

Quality K56flex, V90 Modem at a ridiculously low price

- ITU V.90 and K56flex Auto-Detect
- Full duplex speakerphone (FDSF) mode
- Fax modem send and receive rates up to 2880bps
- 32-bits PCI local Bus Interface
- Speaker volume control and muting



BONUS 60 HOURS INTERNET ACCESS*

DLK033

\$65

WebSearch Code: DLK033

*While stocks last

NetComm Roadster II 56

Data fax SVD and speakerphone modem

- Dual mode 56K flex V90
- Rockwell chipset
- Ultra Connect for faster connections and downloads
- Headset included
- Free Symantec WinFax Pro

\$30 CASHBACK*

* Limited Offer, ends 31st December 1999. Call for details.

Ultra



NET147

\$219

WebSearch Code: NET147

USB



NET028

\$219

WebSearch Code: NET028



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney
• Next day
• International
• where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at

www.isw.com.au



**No.1
SERVICE**

As an International
Company we have won
more awards for products
and service than any
software mail-order
company



ADDRESS

Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Lines open
8.30am - 10.00pm (EST)
Monday to Friday
10.00am - 12.00pm (EST)
Saturday



**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003

FlyVideo 98

LifeView's new FlyVideo 98 boasts the latest in TV viewing, video capture, and Internet broadcast viewing. Just add this Plug and Play compatible board into your PC and you are ready to go! Now you can capture high quality still video or full-motion video footage. Add these video images to your multimedia presentations, demos, or web pages. FlyVideo 98 comes with an intuitive interface making all capture and viewing functions a snap to do. You can make all fine tuning adjustments, volume control, and viewing styles right on screen!

Features & Benefits:

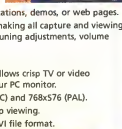
- 125 channel built-in and cable ready tuner allows crisp TV or video viewing in a sizeable scalable window on your PC monitor.
- Capture & image quality up to 640x480 (NTSC) and 768x576 (PAL).
- Supports up to 1280x1024 and 24-bit desktop viewing.
- Full Motion Video Capture up to 30 fps to AVI file format.
- Still Frame Video Capture saves to BMP file or Clipboard.

Bundled with:

- VideoLive Mail - Record live video and audio, then send them to your friends and family over the Internet.
- Microsoft NetMeeting - Hold live videoconference sessions over a local network or the Internet.

* Limited time only

WebSearch Code: AS5026
WebSearch Code: AS5027



Life TV USB

Now you can watch TV, play your favourite movie, video conference, edit your own video files, or send video e-mails from a single product connected to your USB port.

The all new USB LifeTV is the latest offering from Lifeview. LifeTV allows you to receive TV programmes and capture the live video into AVI files, turning your PC or notebook into a versatile TV station for terrestrial and cable TV reception. With hot plug and play capabilities, there is no need to turn off your PC when installing. And as an external USB device with low power consumption, it is ideal for notebook computers. USB port required. Windows 98 only.

Features & Benefits:

- Full motion capture (352x288 at up to 30fps)
- Single frame capture using software snapshot or unique hardware snapshot (up to 640x480)
- Video capture from TV tuner, or any externally connected device (such as VCR or Camcorder)
- Send Video mail messages over the Internet using Video Live Mail
- USB Plug-N-Play
- Twin compatible for software snapshot directly to any picture editing software which supports twin scanners
- NetMeeting for Video Conferencing
- Cyberlink Video Live Mail, Greeting Card, and Image Browser

WebSearch Code: AS5025

* Limited time only



Hauppage!

Bring TV To Your PC With WinTV!

WinTV-Primio, WinTV-PCI and WinTV-Radio PCI Boards give you live video-in-a-window!

Hauppage's WinTV Boards are single slot PCI cards with 125-channel TV-tuners. The TV-source can be from aerial or cable set top box TV. With the external audio/video inputs, you can also connect to a satellite receiver or VCR, camcorder or video camera. These PCI boards connect to your cable TV or to a TV antenna, and display live TV in a resizable window. They do this by digitising the live video from either the built-in 125-channel cable TV tuner or the external video-input source using high quality 4:2:2 video sampling. The digitised video is sent over the PCI bus into the memory of a VGA display adapter, a technique which makes the WinTV PCI boards easy to install and gives a great looking TV picture!

The WinTV-PCI and WinTV-Radio support internet data reception and Teletext data reception. Included is our VTPUS software, for multiple teletext page display and DDE (dynamic data exchange). While live video is being displayed, these boards can also extract either intercard data (Channel 7 in Sydney and Melbourne) or teletext data from the TV signal.

- Live TV-in-a-window on VGA monitors from 640 x 480 to 1600 x 1200 pixels in up to 16 million colors-unique to WinTV.
- Built-in cable ready TV tuner: a 125-channel TV tuner with automatic channel scan.
- Resize the WinTV window from icon size to full screen (or any size in between).
- Auxiliary audio/video input connects to video cameras, VCR's and camcorders.
- Audio output can go to your sound card's Line-In connector or to self-powered speakers.
- Capture professional quality 24-bit images with 4:2:2 digitizing.

* May not be compatible with all graphics cards, please check compatibility with our sales consultants *

- Image save formats supported: TIFF, BMP, PCX, GIF, TGA plus compressed JPEG in color or black/white at 8, 16 and 24-bits.
- Videoconference over the Internet! The WinTV PCI's video digitizer is compatible with your favorite conferencing package such as: Microsoft NetMeeting, CU-SeeMe, Smith Micro's AudioVision, VDO.net, Connectix VideoPhone, Vocaltec's IPPhone, Vivo and lots more. Simply add a video camera and one of these software packages to video conference over the phone lines or the Internet.
- Create high impact presentations with 320x240 AVI clip capture with real time preview. Creates high quality AVI video's in a YUV format.

WebSearch Code: HAU001
WebSearch Code: HAU002
WebSearch Code: HAU003



DIA050	Diamond Monster Sound OEM	\$129
DIA052	Diamond Monster MX300 5-C	\$139
DIA044	Diamond Monster II Voodoo OEM (PCI)	\$189
DIA034	Diamond Monster Fusion OEM (AGP)	\$179
DIA058	Diamond Viper V770 16MB OEM (AGP)	\$129
DIA059	Diamond Viper V770 32MB OEM (AGP)	\$339
DIA056	Diamond Viper V770 32MB Retail (AGP)	\$335
DIA057	Diamond Viper V770 32MB Ultra (AGP)	\$399

AS5022	ATech CapView (\$10 CashBack for limited time)	\$139
AS5018	ATech WaveWatcher Net TV 98	\$249
CRE049	Creative GraphicsBlaster Riva TNT 16MB (AGP)	\$235
VOO003	Voodoo3 2000 PCI	\$349
VOO001	Voodoo3 3000 AGP	\$439
VOO002	Voodoo3 3500 AGP	\$679
LOG093	Logitech QuickCAM Pro USB	\$299
PIN025	Pinnacle MiRo MP10	\$699



TURN ORDINARY VIDEOS INTO EXTRAORDINARY VIDEOS WITH Studio DC10 Plus



Features:

- Pinnacle's award winning Studio editing software which offers users simple drag and drop editing, plus 100s of special effects.
- TypeDeko titling software for giving your productions professional looking titles.
- SmartSound Studio software for generating background music and for adding narration or a CD soundtrack to your movies.
- Microsoft Direct Show technology for instantly previewing your movie.
- The ability to output AVI files for the internet.
- Microsoft Net Meeting software for video conferencing.
- Hot Keys unlimited free technical support and 60-day money back guarantee.

Internal/External	Internal
Disk Space (1/2 hr vid)	1.5GB-10GB
Max Resolution Capture	760x576
	50 fields/sec
Output	768x576
	50 fields/sec
Import AVI files	Yes

Note: Studio DC10 Plus replaces: Miro DC10, Miro DC20, and Miro DRX

RECOMMENDED PC REQUIREMENTS

Processor	P233 or Celeron 300A
Hard Drive	8GB
RAM	64MB
SCSI Drive	Yes*
Operating System	Win95/98

* Required for capture rates above 3MB/Sec.



PIN024

\$599

MULTIMEDIA

WebSearch Code: PIN024

Pocket Scan Converter (PSC 1106)

The Low Cost PC-to-TV Display Solution

Using the Pocket Scan Converter in conjunction with your notebook computer (or PC), any presentation can be displayed on a TV or recorded onto video tape, making the Pocket Scan Converter ideal for business, education and training applications. This compact device simply plugs into your notebook/PC and the other end into a TV/Video to put your presentation onto the big screen. And when the work is done, play computer games on your TV. Designed with flicker reduction circuitry and VHS support, the Pocket Scan Converter produces extremely vivid, high quality images with up to 16.8 million colours.



ASS001

\$189

WebSearch Code: ASS001

Voodoo3 3500 TV AGP

16MB 2D/3D Accelerator with TV and Advanced Digital Video

Features:

- Built in TV Out/Port
- 183MHz Voodoo III 3500 AGP board delivers up to 8 million triangles and 366 Megatexels per second at resolutions of up to 2,048 by 1,536 pixels.
- 3DFX's proprietary flat-panel support.
- Realtime MPEG-2 Video and Intelligent TV-Tuner and Digital VCR, VisualRay™.
- 350MHz RAAMD, TV/S-Video Out capabilities.
- Latest Game/Software Bundle with 16MB of SGRAM.



VOO005

\$599

WebSearch Code: VOO005

ATI All-in-Wonder

All-in-one TV, video and editing multimedia

Everything you need in one great product. The All-in-Wonder even features real-time video compression for recording TV programs without using too much space.

- 128 bit, 3D, 2D and 2D PCI graphics card
- DVD through PC or home theatre
- TV Tuner
- Web TV
- Video Editing
- TV Out
- DVD Hardware



ATI031

\$399

WebSearch Code: ATI031

ATI Rage Fury

The ultimate 3D gaming board

This board is powered by ATI's Rage 128 graphics technology with a huge 32MB of memory. Its fully enabled AGP 2x graphics board will power all of your favourite graphic intensive gaming and entertainment applications for explosive 3D gaming action.

- 32MB SDRAM
- 128-bit accelerator
- 250MHz ramdac
- TV-out
- Twin cache
- Built in DVD hardware
- Designed for gamers



* box shot for illustration purposes only

32 MB

ATI030

\$279

WebSearch Code: ATI030

ATI Xpert 2000

Avoid the pitfall of high graphics costs by adding 32MB and DVD in one solution

Gives PCs 32MB of graphics memory at the price of 16MB! Perfect graphics upgrade for Pentium III 300Hz (or compatible) systems and up.

- 32MB of powerful memory
- 128-bit RAGE 128 graphics engine
- Incredible 3D and 2D graphics
- Hardware DVD video playback
- 32-bit true color 3D graphics up to 1920x1200
- 2D graphics up to 1600x1200@85Hz
- Full DirectX, Direct3D and OpenGL acceleration
- Shattering the Price-Performance Barrier



* box shot for illustration purposes only

ATI033

\$239

WebSearch Code: ATI033



We will not be
beaten on price!
We cut prices not
corners.



Make sure to ask
for your free gift
when ordering.



Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
* where applicable



We aim to stock at
least 95% of ALL
the items we sell



Check our online
store at
www.iswh.com.au



As an International
Company we have won
more awards for products
and service than any
software mail-order
company



Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



Sales Lines open
8.30am 'til 6.00 pm (EST)
Monday to Friday
10.00am 'til 3.00 pm (EST)
Saturday



All prices include Sales
Tax. Prices subject to
change, see page 48 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003

Compro PS39 Digital Video Camera-USB

COMPRO PS39 Digital Video Camera offers great convenience of plug and snap on any Windows PC or notebook. Simply connect the camera to the USB port, a quick software installation and you are ready to take a brilliant picture, or video conference at life like frame rates.

Superior features:

- 40 frames per second (video images)
- 1280 x 960 resolution at 16.8 million true colour still images
- Superior image quality without compression
- Adjustable focus lens (10mm to Infinity)
- Low lux capability
- Plug and Snap on all PC and note-book USB ports
- Includes PS2/AT Keyboard Adaptor, removable tilt and swivel base assembly, user manual



Great for:

- Personalised greeting card and t-shirt transfer
- Picture & Video E-mail
- Video Conferencing
- Internet Home Page creation
- Jazz up reports/presentations
- Picture ID
- Digital photo album and more...

Comes with CD containing:

- Snapshot Image Capturing Software
- AVI Software Driver
- TWAIN Software Driver
- Microsoft NetMeeting 2.0 Video Conferencing Software
- ULEAD Video Studio Software
- Compro Microphone



WebSearch Code: CMP013



CMP013
\$289

Avermedia InterCam The Fastest USB Camera in it's class!

Features:

- * USB Interface for true Plug and Play
- * Snapshot button for still capture
- * High resolution video capture (up to 10 frames/sec @ 640 x 480)
- * Up to 30 frames/sec @ 320 x 240 for conferencing
- * Compatible with Windows 98 only
- * Adjustable Lens
- * 54 degrees field of view
- * Full automatic white balance control



Includes Acer EasyAccess video conferencing software, MGI 2PhotoSuite, Acer Express/Video Mail and Avermedia capture utility.



WebSearch Code: AVE004

AVE004
\$149

RoboCAM

USB Digital Camera

- Plug & play (USB) interface for easy installation
- Capture up to 30fps (352 x 288 pixels) full motion video
- Support single frame snapshot up to 640x480 pixels
- Low power consumption ideal for notebook computers
- Support TWAIN interface for image editing applications
- Crystal clear picture
- No video capture card or power adapter necessary



WebSearch Code: ASS023

* Limited time only

ASS023
\$179



Colour co-ordinated for the fashion conscious users. The stylish blueberry will enhance the normally boring PC's. iMac drivers available.



WebSearch Code: ASS024

* Limited time only

ASS024
\$179

Robo Snoop

RoboCam USB Digital Camera Plus PC Snoop

Video Conferencing, Personal Surveillance/Receptionist & Message Recorder Combined. "Robo Snoop" will allow users the option to perform video conferencing, surveillance, video capture, receptionist duties & message recordings, all for a great price.

RoboCam USB Camera delivers crystal clear pictures with the latest CMOS 300K technology.

PC Snoop integrates Stealth surveillance & Video Message Recording for Home & Office applications.



ALSO
AVAILABLE IN
BLUEBERRY iMAC

WebSearch Code: ASS017

* Limited time only

ASS017
\$275

LOG090	Logitech QuickCam Video Conf. USB	\$175
SONY55	Sony Mavica FD83 Digital Camera	\$1589
SONY50	Sony Mavica FD88 Digital Camera	\$2029
KOD050	Kodak DC280 Digital Camera	\$1789
KOD017	Kodak DC210	\$1049
KOD045	Kodak DC265 Digital Camera	\$1795
KOD046	Kodak DC240 Digital Camera	\$1295
QUA188	Quasar True Blue Hardware	\$169

XIR271	Xircam RealPort GSM Kit Ericsson	\$245
NET160	Netgear 10Mbps Network Starter Kit	\$189
BAY165	Netgear 100Mb Network Starter Kit	\$329
DLK016	D-Link Network Starter Kit	\$179
CAB024	Patch Cable RJ45 UTP 10M	\$55
CAB026	Patch Cable RJ45 UTP 20M	\$69
HPN005	HP ProCurve 10BT 8PT Hub	\$139
LAK121	Pinnacle Blue Box	\$215



10/100Mbps CardBus PC Card

DFF-660TX (10BASE-T/100BASE-TX dual-speed PC card base unit with media coupler)

High Performance

This is a 32-bit high-performance dual-speed 10/100Mbps CardBus PC card designed to permit users on a move to easily connect to a network and share databases and resources in diverse environments. Supporting 20Mbps/200Mbps full duplex, this adapter is engineered to unleash the power of today's notebooks and turn them into robust stations or servers.

Nway 10/100Mbps Interface

The card's single connector connects to either 10BASE-T Ethernet or 100Base-TX Fast Ethernet completely without any need to set configuration. It detects the connected hub's capability and auto-negotiates to use the highest available speed.

Full Duplex Support

Full/half duplex operation is auto-detected in both 10BASE-T and 100BASE-TX modes. In full-duplex, the notebook is connected to a switch on a dedicated segment. With transmission and reception taking place simultaneously, data transfer is doubled. Mobile users can thus hook to a network and turn their notebooks into power servers.

Features

- 32-bit CardBus PC Card.
- 10/100Mbps dual-speed Nway interface.
- Half/full duplex supported.
- Single shielded RJ-45 connector.
- PC Card CardBus standards 68-pin front-end connector.
- 15-pin back-end connector for media coupler.

- UTP/STP cabling supported.
- Menu-driven network O.S. installation program.
- FCC Class B, CE Mark, VCCI Class B, C-Tick.
- Win95/Win 95 OS R2/Win NT 3.51/Win NT4.0.
- Packet driver for FTP PC/TCP.
- Packet driver for Winsock.



D-Link
Building Networks for People

WebSearch Code: DLK033

DLK033

\$169

VIDEO CONFERENCING &
NETWORKING

Ethernet Interface Adapter

DFF-530TX PCI-bus 10/100Mbps Fast Ethernet Network Interface Card

- Intelligent Ethernet/Fast Ethernet Adapter, Auto negotiating 10Base-T/100Base-TX (Nway).
- Plug and Play support. Low CPU utilisation. 32 Bit high performance.
- Optional remote boot rom. Certified driver for Netware, SCO Unix, Windows 95 and Windows NT.



DLK004

\$49

WebSearch Code: DLK004

DLK018 DFF-650 TX Fast ethernet 10/100 Dual Speed N-way PC/MIA Card with RJ-45 connectors

\$179

10/100Mbit NWay Dual Speed Hub

DFF-904

- IEEE 802.3 10Base-T Ethernet repeater.
- IEEE 802.3u 100Base-TX Class II Fast Ethernet repeater.
- 4 Ethernet or Fast Ethernet ports.
- MDI-II uplink port for easy expansion.
- Selection between Ethernet and Fast Ethernet via switch.
- Extensive diagnostic LEDs.
- Compact size, light weight.



DLK020

\$185

WebSearch Code: DLK020

DLK021 DFF-908 DX 8 port 10/100 Mbps Dual Speed

\$329

DLK022 DFF-916 DX 16 port 10/100 Mbps Dual Speed

\$839

DLK028 External 56K V90 Data/Fax/Voice Modem

\$109

DLK029 Internal 56K V90 Fax Modem

\$49

DLK024 DU-H4 4-Port USB Hub

\$75

Fast Ethernet Network Kit

DFF-905

- Easy to install, 10/100Mbps Network Kit for SOHO users.
- Includes two Cat5 20 feet cables and AC power adapter for hub.
- Includes 1 dual-speed hub and 2 auto sensing 10/100 Mbps network cards.
- Simple plug and play installation.
- Runs Windows 95, 98 NT, Netware, others.
- FCC Class B, CE Mark, VCCI Class B, 8CIC.
- Backed up by D-Link's lifetime warranty and lifetime support.

WebSearch Code: DLK017

DLK017

\$289

3-Port USB Hub + 1 Serial Port + 1 Parallel Port

DU-H35P

- 3 USB A-type ports for USB device connection, 1 USB B-type port for Upstream connection to PC or another USB hub.

- 1 Serial and 1 Parallel port for non-USB device connection. User selectable as self or bus powered. 6 foot 'A' to 'B' cable.

WebSearch Code: DLK025

DLK025

\$159

2-Port Internet Ready Server for SoHo Networks

DP-602

- 1 x 10/100Mbps NWay Ethernet Port, 2 x RS-232 460Kbps Com Ports. Supports NAT for single ISP user account, Dial-on-Demand.
- Admin through Windows based program, Web browser and telnet.
- Ethernet Print Servers.
- DHCP, PPP, PAP/CHAP Security. Dual use of Com ports for double bandwidth. Support for Analog modem or BRI ISDN TA.

WebSearch Code: DLK026

DLK026

\$459

1-Port Pocket Size Ethernet Print Server

DP-101

- Support Windows NT, Windows 95, UNIX, TCP/IP, IPX, NetBEUI and AppleTalk protocols.
- With 10 Mbps Ethernet UTP interface. Supports 1 Parallel Printer via connection to Centronics port.
- Supports up to 36 Novell Network file servers, Easy configuration through Windows, Telnet.

WebSearch Code: DLK023

DLK023

\$239



**PRICE
PLEDGE**
We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**
Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**
Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



**MASSIVE
RANGE**
We aim to stock at
least 95% of all
the items we sell



**ONLINE
SHOP**
Check our online
store at
www.iswh.com.au



**No.1
SERVICE**
As an International
Company we have won
more awards for products
and service than any
software mail-order
company



ADDRESS
Unit 12 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**
Sahar Linux open
8.30am 'til 6.00 pm (EST)
Monday to Friday
10.00am 'til 3.00 pm (EST)
Saturday



**TERMS &
CONDITIONS**
All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



Santa Claus
Special offers
available while
stock lasts

EXPRESS ORDERLINE 1300 300 003



COREL

WordPerfect Office 2000

Finally, an office suite that understands the way you work. Perfect for your business, it's packed with features that make life easier. Increase productivity with voice-enabled word processing. Share files across most major applications and customise programs with support for Microsoft Visual Basic for Applications. Create your own business material, such as letterhead and brochures. Produce spreadsheets that give data real meaning and slide shows that really make an impact, and publish Web pages from the core applications, without knowing HTML.

It's all about getting the job done right, with suite-wide integration, you can combine text, graphics and charts in one document. WordPerfect Office 2000. Today's office solution.

WordPerfect Office 2000

Corel Presentations 9 - Create captivating, high-quality slide shows and drawings that leave a lasting impression with this dynamic presentations application. Enhanced Microsoft PowerPoint import/export capabilities. Redesigned Internet Publisher gives you step-by-step instructions on publishing a slide show to the Web.

Quattro Pro 9 - Turn numbers into meaningful information with this powerful spreadsheet program. Organise, analyse, report, manage and share data quickly. Increased notebook size now supports up to one million rows, giving you greater flexibility when converting Microsoft Excel files. Enhanced Microsoft Excel conversion capabilities.

WordPerfect 9 - Professional word processor, create outstanding documents, such as newsletters, reports, brochures, add graphics, charts and tables with ease. Enhanced Microsoft conversion capabilities. Corel RealTime Preview lets you preview formatting before applying it to your documents.

CorelCENTRAL 9 - Manage time and tasks efficiently with this effective information manager. Organise, store, and access communication and scheduling information with ease. PalmPilot Synchronisation lets you synchronise the Calendar, Event & Task Lists, Address Book & Memo applications.

Trellix 2 - Quickly organise documents and publish them to the Web without knowing HTML. Increase the availability of information throughout a corporation and reduce the workload by delegating content ownership to specific individuals.

WebSearch Code: COR560
WebSearch Code: COR548
WebSearch Code: COR546

Corel Word Perfect 8 for Linux
COR560
\$89

EDUCATIONAL
PRICING
AVAILABLE

Corel Office 2000 U/G
COR548
\$399

Corel Office 2000 U/G
COR546
\$199

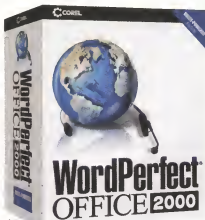


WordPerfect Office 2000 Voice-Powered Edition

Includes all the
applications in Office
2000 plus:

Philips FreeSpeech 2000

- Use the power of your voice to create, edit and format documents in WordPerfect 9.
- Philips FreeSpeech 2000 uses High Speed, High Accuracy technology to dramatically improve recognition rates.
- Supports dictation by multiple users in multiple languages.
- EasyEdit lets you playback text for easy proofreading.
- Explore the Web with your voice.
- Voice-enhanced word processing means users can watch their words appear on screen as they speak to their computer at a normal pace up to 160 wpm.



WebSearch Code: COR549
WebSearch Code: COR547

Corel Office Voice
COR549
\$459

Corel Office Voice U/G
COR547
\$259

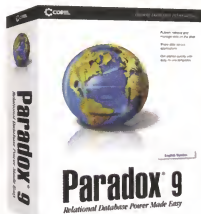
WebSearch Code: COR332

Corel Paradox 9 Developer's Edition

Turning Data Into Information

Interpret, present and share information with an easy-to-use relational database designed for new users, experts and developers. Paradox 9 lets you see the meaning behind data, helping you make better decisions.

- Compatible and Web-ready, Paradox 9 makes it easy to exchange data across applications, including Microsoft Word and Microsoft Excel, or publish it straight to the Internet.
- Powerful tools, including ObjectPAL, let developers and advanced users create custom applications.
- Paradox 9 can run on a single computer or a multi-user network, so it's flexible enough to accommodate your changing needs.



COR332
\$599

Corporate Licence

Licensing - keeps you legal and reduces cost! As more and more organisations realise the benefits of centralising their software purchasing, the Software Warehouse specialised licensing team has become an absolute necessity for many IT Buyers. The Software Warehouse Corporate Licensing team are knowledgeable and dedicated team members. They provide a low cost way of purchasing and updating your software requirements throughout your organisation.



SYMANTEC

Lotus



Adobe



Microsoft Office 2000 Professional

Powerful tools for managing your business.

What Productivity Means Today

Microsoft Office 2000 Professional is rich in capabilities and easy to use, providing six integrated productivity applications you need to make smarter business decisions.

Features & Benefits:

- Communicate with customers more effectively. Use Microsoft Outlook to send and receive e-mail, and manage all your tasks, appointments, and contacts.
- Create powerful presentations quickly. The new Tri-Pane View in Microsoft PowerPoint makes it easy to add new slides, edit text, and enter notes - all from one window.
- Create, manage, and share a database. Microsoft Access makes it easy to organise your data and share it online for better business decisions.
- Turn your numbers into answers. Apply easy-to-use drag-and-drop tools to conduct rich interactive analyses using PivotChart dynamic views in Microsoft Excel.
- Share your work online. Create a document in Microsoft Word or any other Office application and publish to your Web server.
- Improve your effectiveness with the specialised Microsoft Small Business Tools. Communicate better with customers, access key industry resources, and generate direct mail campaigns.
- Build a presence on the Web. Wizards in Microsoft Publisher walks you through the steps to create a professional-looking Web page.

Upgrade
MSS229

ONLY \$455

\$50 CASH BACK*

*** Pay \$505 for Office Pro
Upgrade & receive \$50
Cashback**



Office 2000 Pro
MSS214

\$865

WebSearch Code MSS229
WebSearch Code MSS214

* Offer valid until 15 December 1999. Offer only applies to Microsoft Office 2000 Professional Upgrade. Offer does not apply to Office Professional Open Licenses. Offer limited to one re-imbursement per customer. Cheque will be posted 2-4 weeks from receipt of Proof of Purchase

OFFICE PACKAGES

Microsoft OFFICE 2000 FAMILY

What Productivity Means Today

	Microsoft Word 2000	Microsoft Excel 2000	Microsoft Outlook	Microsoft Publisher	Microsoft Small Business Tools	Microsoft Access	Microsoft PowerPoint	Microsoft FrontPage	Microsoft PhotoDraw	Microsoft Developer Tools	Full Version Price & Code	Upgrade Price & Code
											WebSearch Code	WebSearch Code
 Standard	✓	✓	✓				✓				MSS217 \$719	MSS220 \$389
 Small Business	✓	✓	✓	✓	✓						MSS216 \$719	MSS223 \$395
 Professional	✓	✓	✓	✓	✓	✓	✓				MSS214 \$865	MSS229 \$505
 Premium	✓	✓	✓	✓	✓	✓	✓	✓	✓		MSS215 \$1159	MSS221 \$595
 Developer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MSS218 \$1479	MSS222 \$865



We will not be beaten on price!
We cut prices not corners.



Make sure to ask for your free gift when ordering.



Full range of delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



We aim to stock at least 95% of ALL the items we sell



Check our online store at
www.iswh.com.au



As an International Company you have won awards for products and services that any software mail-order company



Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales 2015



Sales Lines open
8.30am - 6.00pm (EST)
Monday to Friday
10.00am - 3.00pm (EST)
Saturday



All prices include Sales Tax. Prices subject to change, see page 46 for terms and conditions.



EXPRESS ORDERLINE 1300 300 003

QuickBooks & QuickBooks Pro With Payroll GST GUARANTEED

QuickPayroll Pro V6 works seamlessly with Quicken's QuickBooks V6 financial management and accounting software to transfer payroll information directly into the company's accounts.



Quicken

QuickBooks with Payroll



QUI152
\$399

WebSearch Code: QUI152



QUI150
\$175



QUI148
\$309



QUI141
\$89

Quicken 7 Deluxe

With Quicken, organising your personal and small business finances has never been faster, more simple, or more accurate. Quicken puts and keeps you in control. Track all bank accounts, credit cards, loans, mortgages and investments. And with "Move Transactions" you can put your money where you want it, when you want it. Fast. What's more, Quicken is easier to learn, and even easier to use. All of which adds up to a clearer insight, leading to you making well informed and better business decisions.

WebSearch Code: QUI141

Payroll Pro V6

"The Best and Easiest to Use Release of Payroll Ever"

1. QuickPayroll PRO is designed for small to medium sized companies, and can manage up to 999,999 employees. The software keeps track of all employee pay details, prints pay slips and transfers pays. It also tracks superannuation contributions and tax and group certificates, calculates tax payable, leave accrued, WorkCover and provides quick access to all payroll information in over 70 different report formats.

And, with recent changes in Government Legislation now requiring all employers to report FBT and back payments of salary and wages when compiling group certificates, all QuickPayroll customers must upgrade to this latest version in order to comply with the new Australian Taxation Office reporting regulations, enabling you to print directly onto the revised group certificate format.

"Taking the Stress out of Managing Your Payroll"

Used by over 18,000 Australian paymasters, QuickPayroll PRO has recently been awarded Australian PC User Best Buy.

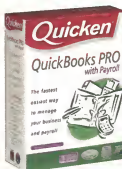
QuickBooks V6 & QuickBooks Pro V6

2. QuickBooks V6 & QuickBooks PRO V6 - QuickBooks is the world's best selling financial management and accounting system for small and medium sized businesses, and is recommended by more accountants worldwide than any other software of its kind.

"Businesses with Inventory and Double Entry Accounting Demands"

By showing exactly what you owe, to whom and when, QuickBooks 6.0 keeps track of your company's bank balances, loans and other finances, calculates charges on overdue payments, monitors unpaid bills, writes cheques, records stock and offers up to 79 different financial graphs and reports for you to access the financial status of your company at any one time. And for trouble-free tax reporting, QuickBooks 6.0 will also code each and every transaction you've made, making it the quickest and easiest way to manage your business finances.

QuickBooks PRO 6.0 has all the features and functionalities of QuickBooks 6.0, with additional time saving management tools including time tracking, estimating and job costing, where employees hours can be entered onto weekly time sheets and recorded by job number. Then, for effortless financial administration, this information flows directly to invoices.



QUI153
\$489

WebSearch Code: QUI153

QUI147	QuickBooks V6 Tech Upgrade	\$89	QUI155	Quick Payroll 6.0	\$132
QUI149	QuickBooks Pro V6 Tech Upgrade	\$149	QUI156	Quick Payroll Pro 6.0	\$269
QUI151	QuickBooks Pro V6 - 5 Licences	\$269	MYO003	MYOB AssetManager	\$245
QUI152	QuickBooks V6 & Payroll	\$449	MYO028	MYOB PowerPay	\$425
QUI153	QuickBooks Pro V6 & Payroll	\$499	MS5129	MS Money 99	\$49
QUI158	QuickBooks Pro V6 & Payroll - 5 User	\$1249	LG5004	Logisoft PayBook	\$199
QUI140	Quicken V7	\$69	LG5005	Logisoft PayPacket (up to 3 Co.)	\$399
QUI142	Quicken for Business V7	\$135	LG5006	Logisoft PayPacket Pro (unlimited Co.)	\$999



www.iswh.com.au

MYOB is Australia's favourite

- Handle both the current Wholesale Sales Tax (WST) and Australia's forthcoming GST.
- Used by over 160,000 Australian businesses
- Recommended by 2 out of 3 Australian Accountants
- Year 2000 compliant - see www.myob.com.au



THE AUSTRALIAN GST WILL BE UNLIKE ANY OTHER IN THE WORLD

MYOB products have the unique advantage of being developed in Australia for Australian business conditions. That's why we've built our GST products in Australia, to cater for the unique aspects of Australia's GST.

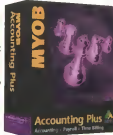
MYOB Accounting Plus v9



Accounting + Payroll + Time Billing

MYOB Accounting Plus includes all of the features found in MYOB Accounting and adds a fully integrated payroll and, for the first time, a heavy duty professional time billing module.

As well as meeting the needs of thousands of different types of small businesses, MYOB is now just right for professionals such as consultants, lawyers, accountants, graphic designers and anyone who bills by the time they spend with a client or on a project.



MYO036

\$475

WebSearch Code: MYO036

MYOB Accounting v9



MYOB Accounting Version 9 builds on all of MYOB's award-winning features and is now ready for Australia's forthcoming GST. MYOB Accounting Version 9 handles both the current Wholesale Sales Tax (WST) and the GST with ease, which means you can start to prepare now and smoothly make the transition from WST to GST. The extensive GST features allow you to easily collect, pay and report GST. New features include: accrual and cash-based GST reports, the Australian Business Number on all invoices and statements and GST entry fields in all relevant transaction entry screens. MYOB Accounting also includes: Invoicing, Receivables, Purchasing, Payables, Cashbook, Powerful Inventory, Job Costing, General Ledger and OfficeLink - a dynamic link to Microsoft Office. Everything you need to build a better business.

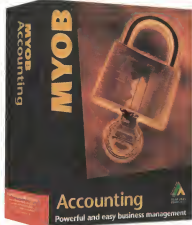


MYOB

MYO034

\$329

WebSearch Code: MYO034

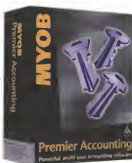


MYOB Premier v3



Multi-user accounting that's as easy as MYOB

All the accounting features of MYOB Accounting Plus, with additional features tuned for use across a network by multiple users. MYOB Premier brings the power, flexibility and award-winning ease-of-use of MYOB to multiple concurrent users. Includes access for 3 concurrent users and additional licences easily added.



MYO013

\$869

WebSearch Code: MYO013

MYOB FirstAccounts v3



Your ideal first accounting system, MYOB FirstAccounts makes it easy for you to track income and expenditure, reconcile bank statements, create and print invoices, statements, and purchase orders, track who owes you money and who you owe money to. Produce profit & loss and other key reports with a mouse click.

No business is too small for FirstAccounts. Outgrown Quicken, MSMoney? You can easily move up to MYOB FirstAccounts. FirstAccounts is designed for small service businesses and includes all the features you need today, and a growth path for the future. If, as your business grows, you want more power, flexibility and analysis you can easily upgrade to any of the MYOB Accounting products. No rekeying of data is required. You can upgrade without stopping business.

MYOB FirstAccounts v3 also adds these functions (available across the whole range):

- user-definable aging - choose 7-14-21 days or whatever you want
- electronic bill payment to save you time and money
- multiple customisable forms

Made in Australia, for Australian Businesses

Accounting and business requirements differ greatly between countries. That's why FirstAccounts has been created in Australia, for Australian businesses. No one else provides world-class software written specifically for Australian businesses.

MYOB

MYO035

\$165

WebSearch Code: MYO035





We will not be
beaten on price!
We cut prices not
corners.



Make sure to ask
for your free gift
when ordering.



Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
where applicable



We aim to stock at
least 95% of ALL
the items we sell



Check our online
store at
www.iswfh.com.au



As an International
Company we have over
20 years experience in products
and services from our
software and online
company



Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



Sales Lines open
& 24hrs 'til 7.00 pm (EST)
Monday to Friday
10.00am 'til 3.00 pm (EST)
Saturday



All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and Conditions.



EXPRESS ORDERLINE 1300 300 003

CorelDRAW 9 Graphics Suite

The world's number one PC
illustration and image-editing
program for professionals

Major Applications:

CorelDRAW 9 - illustration and page layout
Corel PHOTO-PAINT 9 - image editing and
bitmap creation

Suite-Wide Features

- Robust PDF support, including import and export, job ticketing, bookmarks, image downsampling and more
- Enhanced printing features - imposition layout, preflight warnings, miniature preview to verify changes and downsampling of bitmaps
- Import and export images with embedded ICC standard profiles - CPT, CDR, TIFF and EPS
- Interactive tools, including Perspective Drop Shadow, Fill, Blend, Transparency and more
- iXla digital camera interface for easy download of images from over 120 camera models
- Support for Adobe Illustrator AI, EPS and Adobe Photoshop PSD with layers, and MetaCreations Painter RIFF files

Libraries

25,000 professional clipart
1,000 TrueType and Type 1 fonts
2,500 high-resolution photos

*While stocks last



Upgrade
COR271

\$405

WebSearch Code: COR271

CorelDRAW 9 Premium Colour Edition

Enjoy phenomenal control over output quality with
CorelDRAW 9 Premium Colour
Edition. This sophisticated
suite combines award-
winning Corel graphics
software with intelligent
colour calibration
technology from
Heidelberg.

- Experience true creative freedom with the legendary vector illustration and page layout features of CorelDRAW 9 and the powerful image-editing and painting tools of Corel PHOTO-PAINT 9.
- Innovations like the Mesh Fill tool and Artistic Media brushes expand your capabilities. Robust PDF support and advanced imposition tools maximise your productivity.
- With enhanced printing features and accurate colour profiling for input, display and output devices, you'll get superb results.

*While stocks last

Upgrade
COR335

\$859

WebSearch Code: COR335

COR542	CorelDRAW Select Edition	\$79
COR270	CorelDRAW V9	\$749
COR561	CorelDRAW V9 Educational	\$209
COR541	Corel Gallery Magic 1,000,000	\$129
COR544	Corel Print House Magic 4 Premium	\$79
MS5247	MS Publisher 2000	\$149
ME036	Art Dabbler	\$69
ME028	Kal's Photo Soap 2	\$65

Corel PHOTO-PAINT 9

This award-winning image professional image composition and painting program is ideal for designers and digital imaging enthusiasts who edit and create images for print or the Web. Combines exceptional image composition, masking and image enhancement features with natural media brush tools in one comprehensive bitmap editing program.

- Create stunning image compositions using powerful masking tools and features, and object control.
- Take advantage of the easy-to-use visual interface to create unique natural media brush effects.
- Take advantage of the robust Publish to PDF option, including advanced text and font handling, downsampling and compression options, job ticketing capabilities, bookmark and hyperlink options, and color management options.

Libraries

1,000+ TrueType and Type 1 fonts
1,500 high-resolution photos textures and brush nibs

WebSearch Code: COR334

Upgrade
COR334

\$169

CorelDRAW 9 Office Edition

Give your professional ideas maximum visual impact with
CorelDRAW 9 Office Edition. An essential complement to your business
software, this dynamic graphics suite
combines extraordinary ease of use
with award-winning illustration
and image-editing tools.

- Produce professional-looking presentations, reports, marketing material and Web pages using wizards and customizable templates.
- Create flowcharts and organizational charts quickly and easily.
- Increase your productivity with an intuitive interface and exceptional file compatibility, including full integration with WordPerfect, Corel Presentations, Microsoft Word and Microsoft PowerPoint, and seamless file transfer with CorelDRAW 9 Graphics Suite.
- Choose from a collection of business-specific clipart images and templates to enhance your work. CorelDRAW 9 Office Edition-visual communication for business.

Upgrade
COR336

\$229

WebSearch Code: COR336

*While stocks last

JAS009	PaintShop Pro 6.0	\$165
COM105	Blade Pro	\$69
COM106	Illuminatus 4.5	\$249
ADO206	Adobe PageMaker 6.5 Plus (Win)	\$795
ADO207	Adobe PageMaker 6.5 Plus (Mac)	\$795
ADO160	Adobe Illustrator 8 (Win)	\$699
ADO161	Adobe Illustrator 8 (Mac)	\$699
MS5197	MS PhotoDRAW 2000	\$229



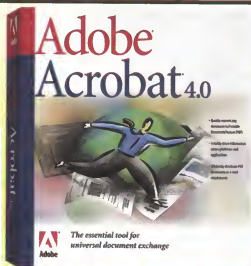
Adobe Acrobat 4

Adobe The Essential Tool for Universal Document Exchange
"It's like you deliver the document yourself"

When you're sending an electronic document, you want it to arrive exactly the way you intended. With Acrobat 4.0 from Adobe you can be sure that it will. Adobe Acrobat 4.0 works with almost any platform or application. It's not just smart, it's easy.

Adobe Acrobat 4.0 offers:

- Flexibility** - Acrobat lets you exchange documents freely, without worrying about compatibility issues.
- Productivity** - Quickly creating and delivering PDF files that everyone can view, distributing them electronically for comments and approvals, and efficiently publishing them in any medium replaces an often cumbersome, time-consuming, paper-based workflow.
- Control** - PDF lets you share documents without sacrificing their original design. PDF preserves the documents' formatting, colors, fonts, and images exactly as they were created.
- Accessibility** - PDF files can be distributed in print, on the Web, on corporate servers, attached to e-mail, or on CD-ROM.



GRAPHICS & DTP

WebSearch Code: ADO178
 WebSearch Code: ADO177

Windows
ADO178
\$395

MAC
ADO177
\$395

Adobe Design Collection

Unleash your creativity with powerful, integrated Adobe design tools.

Together, the programs in this collection deliver a powerful set of professional graphics, layout, and publishing tools that form the basis for an exceptionally smooth design workflow.

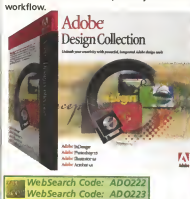


Includes:

- Adobe InDesign 1.1
- Adobe Photoshop 5.5
- Adobe Illustrator 8.0
- Adobe Acrobat 4.0

Mac
ADO223
\$2299

Windows
ADO222
\$2299



WebSearch Code: ADO222
 WebSearch Code: ADO223

Adobe Photoshop 5.5

The world-standard image-editing solution for print and the Web

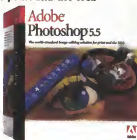
Adobe Photoshop 5.5 software offers new creative tools and Web features and gives you the power of Adobe ImageReady 2.0 for advanced processing of Web graphics.

Produce images with "painted" brush strokes, and perform complex masking tasks with professional-level precision.

Complete all your essential Web functions including file optimisation right in Photoshop, and then jump to the ImageReady application to slice layered images, produce JavaScript rollovers, and create GIF animations.

Create original artwork, retouch photos, and add special effects with comprehensive filters.

This integrated tool set maximises your productivity while helping you achieve the finest quality output.



Windows
ADO192
\$1059

Mac
ADO193
\$1059

WebSearch Code: ADO192
 WebSearch Code: ADO193

Adobe Publishing Collection

The complete package for the creation, assembly and delivery of printed & electronic documents

The Adobe Publishing Collection brings together the latest versions of four of the World's leading graphic software packages all in one box. But not only do they come as one - they work as one. Drag and drop features let users move effortlessly between programs, ensuring a seamless workflow - whether for print, multimedia or online. A comprehensive and cost-effective way for users such as graphic artists to business professionals to start publishing.

Includes:

- Adobe PageMaker 6.5 Plus
- Adobe Illustrator 8.0
- Adobe Photoshop 5.5
- Adobe Acrobat 4.0

WebSearch Code: ADO204
 WebSearch Code: ADO205

Windows
ADO204
\$1739

Mac
ADO205
\$1739



Adobe InDesign

Page Layout and Design for the future of professional publishing

Adobe InDesign software is a new, state-of-the-art page layout program that delivers unprecedented creative freedom, productivity, and precision, while integrating seamlessly with Adobe's other leading design programs.

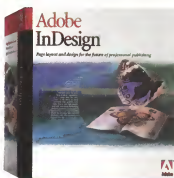
Award-winning Adobe user interface - Enjoy design tools that work together to provide a seamless creative environment. InDesign, Illustrator, and Photoshop software looks, feels, and behaves similarly because of common tools, commands, palettes, and keyboard shortcuts.

Windows
ADO181
\$1185

Mac
ADO208
\$1185

Windows
ADO211
\$475

Mac
ADO212
\$475



* Available to registered users of Quark Xpress, Adobe Photoshop, Adobe Illustrator and Adobe PageMaker



We will not be beaten on price!
We cut prices not corners.



Make sure to ask for your free gift when ordering.



Full range of delivery options:
• Same day, Sydney*
• Next day*
• International*



We aim to stock at least 95% of ALL the items we sell



Check our online store at
www.iswh.com.au



As an International Company we have won more awards for products and service than any software mail order company



Unit 13 Broadford Street
16 Broadford Street
Alexandria
New South Wales 2015



Business hours open
8.30am - 6.00pm (EST)
Monday to Friday
9.00am - 5.00pm (EST)
Saturday



All prices include Sales Tax. Prices subject to change, see page 46 for terms and conditions.



Christmas Special

EXPRESS ORDERLINE 1300 300 003

Visio 2000 Standard Edition

The Worldwide standard for creating & sharing business diagrams

Visio 2000 Standard Edition takes the worldwide standard in business diagramming tools to the next level. Using Visio 2000's seamless Microsoft integration, you can drag and drop flowcharts, organization charts and other business diagrams into PowerPoint, Excel and Word documents. Add brilliant new backgrounds, borders and color schemes, then leverage Visio 2000 Standard Edition's advanced Internet functionality to create, store and exchange drawings via your corporate intranet or the Web.

Features:

- Easy to Learn & Use
- Streamlined Work Environment
- Enterprise-wide Diagramming
- Microsoft Office Compatibility
- Rich Internet Support



VIS120

\$325

WebSearch Code: VIS120

Visio 2000 Technical Edition

The worldwide leader in technical drawing and diagramming

Visio 2000 Technical Edition is the leading tool for creating precise 2-D technical diagrams and drawings. Unlike CAD, it's fast and easy to use - just assemble drawings intuitively using more than 4,000 intelligent, industry-specific SmartShapes symbols. Or create them from scratch using precision drawing tools. Link shapes to a database, and generate reports instantly.

- Intelligent, dynamic design environment streamlines the drawing process, allowing nonCAD users to get right to work.
- Navigate large drawings quickly.
- Publish and share drawings on the Internet.
- Import/export Autodesk AutoCAD (DWG) and Bentley Systems MicroStation (DGN) files. When you insert CAD drawings as backgrounds, shapes snap automatically to underlying geometries.
- Design custom solutions using Microsoft Visual Basic for Applications 6.0 (included) or Visual C++.
- Powerful drawing solutions for process engineering, facilities management, AEC, electrical engineering, and more.



VIS125

\$659

WebSearch Code: VIS125

BUY NOW AND GET A FREE* Visio 2000 UPGRADE!

Purchase any Visio 5.0 product between 15th August 1999 and 31st December 1999 and receive a FREE upgrade to the corresponding Visio 2000 edition.*

*Call for full details

Visio Professional 5.0 Visio Enterprise 5.0

Cross-Functional Uses for IS/IT Professionals

Whether your IS/IT specialty is networks, databases, or software, Visio Professional gives you the tools to do your job and to exchange information effectively with other IS/IT personnel.

- Network diagramming and documentation.
- Software diagramming and documentation.
- Database diagramming and documentation.
- Share and exchange information.

A Fully Customizable Development Platform

Different jobs require different capabilities. That's why we allow you to customise virtually every aspect of Visio Professional:

- Create custom shapes.
- Integrate Visio Professional into a custom solution.
- Add ActiveX controls.
- Tap our developer resources.

Do you know that we make two products for the IS/IT professional? If you need a more powerful design and modelling tool, check out Visio Enterprise, built on the foundation of Visio Professional.



VIS106

\$599

WebSearch Code: VIS106

Design and Model Your Enterprise Information Architecture

Visio Enterprise is the ideal tool for designing and documenting networks, modelling and designing databases, and modelling software applications across an enterprise information infrastructure.

- Streamline the design and documentation of LANs, WANs, wiring closets, and directory structures.
- Built-in SNMP-based network AutoDiscovery technology and Guided Diagramming capabilities produce diagrams of logical and physical topologies.
- Guided Updating feature helps keep diagrams current as your network changes.
- 14,000 exact-replica, vendor-specific device shapes represent your entire network in complete detail.
- Design and re-engineer databases from IBM, Informix, Microsoft, Oracle, and other leading vendors.
- Synchronize models with databases using a unique three-way comparison that detects changes made to the database since the last model-design update.
- Create customizable reports, generate and edit DDL scripts, and freely switch among multiple entity relationship notations.



VIS115

\$1529

WebSearch Code: VIS115

VIS121	Visio Standard 2000 Upgrade.....	\$169	AUT471	AutoCAD LT 2000 Upgrade.....	\$270
VIS126	Visio Technical 2000 Upgrade.....	\$329	AUT108	AutoCAD R14 Student Edition.....	\$375
VIS123	Visio Standard 2000 10-User Licence Upgrade.....	\$1589	AUT025	AutoSketch 6.0 Upgrade.....	\$119
VIS124	Visio Standard 2000 10-User Licence.....	\$2899	AUT106	AutoSketch 6.0 Institution Edition.....	\$89
VIS117	Visio Technical Design Suite.....	\$799	AUT105	AutoCAD LT 97 3-in-1 Symbols Library.....	\$129
VIS100	Visio Standard 5.0 Upgrade.....	\$159	IMS146	IMSI TurboCAD V6.....	\$199
VIS104	Visio Professional 5.0 Upgrade.....	\$299	IMS147	IMSI TurboCAD Pro V6.....	\$535
VIS116	Visio Enterprise 5.0 Upgrade.....	\$1099	IMS150	IMSI Visual CADD 3.0.....	\$555



AutoCAD LT 2000

The only low cost, professional 2D CAD program that's 100% AutoCAD compatible

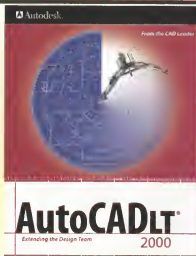
New AutoCAD LT 2000 is the easiest, most efficient way for you to extend your design team because it's simple enough for new-to-CAD users, accessible enough for occasional users, and powerful enough for professional-strength drafting. Plus it's the only low-cost, professional 2D CAD program to combine productivity-packed precision and award-winning HTML-based online help with unprecedented ease-of-use and 100 percent AutoCAD 2000 compatibility. So team members can exchange drawing files with confidence knowing that data integrity and visual fidelity are ensured. And they can take advantage of more than 200 new productivity features including Multiple Design Environment, AutoCAD DesignCenter, and the Object Property Manager.

AutoCAD LT 2000 is the perfect low-cost, 2D CAD tool for today's design environment. That's because there's usually an extended design team working on every project. From the architects and engineers to the drafters, consultants, and clients your entire team will communicate more easily, share data more accurately, and work more efficiently thanks to all of the professional-strength features of new AutoCAD LT 2000.

- Visual and Intuitive
- Drawing Productivity
- Compatibility and Design Sharing
- Learnability



Add-ons Available!
AUT111 Smart Architect Lt.....\$899
AUT112 Lt 3D.....\$269



AutoCAD LT®
Extending the Design Team
2000

AUT469

\$789

WebSearch Code: AUT469



AUT109 Student Copy.....\$249
AUT110 Faculty Copy.....\$699

Actrix Technical

The Simply Smarter Way to Diagram

Actrix Technical is a 2D diagramming tool that provides a truly automated drawing environment for easily creating a full range of dynamic drawings, from facilities plans to technical schematics to business diagrams.

Easy to Use

Just select the template that suits your task and browse the catalogues you're shown. Then drag and drop the ActrixShapes objects you need into your diagram or drawing. You can even directly manipulate them on-screen.

Superior AutoCAD Interoperability

Actrix Technical can read and write AutoCAD drawings, and it lets you reuse AutoCAD blocks in your diagrams.

Intelligent, Discipline-Specific, ActrixShapes

Drag intelligent ActrixShapes into place and they automatically snap, align, and rotate precisely into position. Handle-based, dynamic editing means you can reshape them on the fly. Thousands of ActrixShapes objects have been developed by industry experts and are included with Actrix Technical software.



AUT056

\$495

WebSearch Code: AUT056

Actrix Business

Better Visuals for Better Communication

Actrix Business is the easy-to-use, value-priced diagramming tool designed for business professionals who need to quickly create dynamic visuals like flowcharts, block diagrams, organization charts, and other business drawings. Get results faster with features like single-click drag-and-drop drawing, automatic snapping and alignment of shapes, and easy navigation using the familiar Microsoft Office interface. Get your point across faster with compelling visuals that can be easily dropped into Microsoft Word or PowerPoint documents, or shared on the Internet in HTML. Actrix Business is part of the Actrix family of Simply Smarter Diagramming tools from Autodesk, the world leader in PC-based design tools.



AUT470

\$179

WebSearch Code: AUT470

AutoSketch 6.0

Spend Time Drawing - Not Learning Software!

An affordable and easy-to-use precision drawing tool for new or occasional CAD users who need to create conceptual drawings and sketches. AutoSketch 6.0 provides productivity and ease of use features not found in other low cost precision drawing programs.

Other features include 3-D Effects to add more impact to conceptual drawings, proposals and presentations; customizable grids; in-place OLE editing and the ability to import/export DWG files. Compatible with Microsoft Windows 98, 95 and NT.

- Drawing Guides
- Detail View
- Automatic Snap
- Construction Lines
- Spell Check
- Advanced tools for easier wall placement
- Dynamic Pan & Zoom
- Hyperlinks
- AutoArray



Upgrade AUT025

QUI052

\$169

\$115

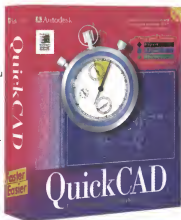
WebSearch Code: QUI052

WebSearch Code: AUT025

QuickCAD

Faster, Easier, and Most Affordable CAD!

QuickCAD Millennium Edition is the faster, easier, most affordable CAD software, whether you're a first-time user or an expert. A three-level interface prompts you to choose your level of experience - Beginner, Advanced, or Expert - to easily create any technical drawing. Other features include QuickHatch, AutoArray, Jump Snap, Guidelines, Realtime Pan and Zoom and compatibility with most popular CAD programs. In addition, QuickCAD software's DWF export allows you to publish your drawings on the Web. QuickCAD Millennium Edition offers features and performance to allow you to become more productive even faster.



AUT040

\$75

WebSearch Code: AUT040



We will not be beaten on price!
We cut prices not corners.



Make sure to ask for your free gift when ordering.



Full range of delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



We aim to stock at least 95% of ALL the items we sell



Check our online store at
www.iswh.com.au



As an International Company we have won awards for product and services that any software end-user company



Unit 13 Bradford Street
10 Bradford Street
Alexandria
New South Wales
2015



Sales Lines open
8.30am - 6.00 pm (EST)
Monday to Friday
10.00am - 6.00 pm (EST)
Saturday



All prices include Sales Tax. Prices subject to change, see page 46 for terms and conditions.



EXPRESS ORDERLINE 1300 300 003

INETstore Professional

Online Shops and Catalogue Builder

- iNETstore's easy to use interface allows users to quickly create and maintain an online shop or catalogue.
- The Store Creation Wizard guides you through templates, allowing you to create your catalogue or shop in minutes.
- Allows users to build and maintain catalogues containing thousands of items.
- iNETstore includes built-in basket and trolley facilities that are setup with templates. You can use these easily without the need for any complicated programming.
- iNETstore gives you the ability to add sophisticated keyword and constraint search pages to your shops and catalogues.
- iNETstore supports ODBC compliant databases such as Microsoft Access. Using the wizards in Microsoft Access customers can import and export data to and from iNETstore from Microsoft Access, Excel and other ODBC compliant databases. (Microsoft Access should be purchased separately.)
- The Offline Maintenance module allows you to build and maintain your shop or catalogue at home or office and then upload to your ISP any time using the built-in send-to-server wizard.
- The Online Maintenance module allows you to maintain the shop with any web browser, including Netscape Navigator and Internet Explorer.

INETstore®

Online Shops and Catalog Builder



1 MONTH FREE EMAIL BASE SUPPORT

12 MONTHS FREE UPGRADE

INETstore Professional
INT145
\$845

INETstore Enterprise
INT146
\$3595

INETstore Enterprise

In addition to the features of iNETstore Professional:

- Order Tracking module keeps your customers informed of the progress of their orders. Quickly determine whether orders are being assembled, tested, shipped, or are on back order.
- User Access Control allows you to create different user profiles for your wholesale and retail customers, and allows you to customise the shopping experience for different users.
- Supports the use of Microsoft SQL Server and Oracle database engines.
- Includes "script" based replicator utility which allows you to take advantage of your existing databases by importing certain text based file formats into your new online catalogue or shop.
- The Store Cart module allows your end users to store their shopping carts for future use.

WebSearch Code: INT145
WebSearch Code: INT146

MasterClips FloorPlan 3D Design Suite v5

Design and Visualize Your Home and Garden in Photo-Realistic 3D

New FloorPlan 3D is Packed with over a Hundred Easy-to-Use Design Tools and Top-Notch Technology! Whether you're planning to build a new home, renovate your existing one, add a deck or landscape your entire lot, FloorPlan 3D Design Suite has everything you need to take your project from concept to reality.

Featuring:

- Award-Winning LightWorks Rendering
- Real-time Walkthroughs
- Integrated Materials Editor
- Customizable Symbol Database
- Customizable 2D & 3D Objects
- Handle-Based Editing
- Unlimited Building Levels
- Automatic Square Footage Calculation
- Intelligent Object Insertion
- Self Healing Walls
- Import/Export to CAD via DXF
- Integrated Internet Resources



IMS258

\$125

WebSearch Code: IMS258

MasterClips 1,250,000

We've combined the vast and complete MasterClips Premium Collection on CD with ArtToday's expanding online image archive. The result: 1,250,000 - a new standard in clip art

quality, convenience and selection. And with the included vector art editor, hundreds of thousands of image options are only the beginning! Online or right out of the box, awesome images from two of the art industry's favourite collections make every your project, presentation, publication, or Web page as stylistically unique as can be!

Featuring:

- 500,000 Images on CD
- 750,000 Images on Line
- Key Word Searches
- Vector Art Editor

INSI INSIGHT.COM

MasterClips 1,250,000

Premium Images The Ultimate Award-Winning Collection!

FEATURES:
• 500,000 Images on CD
• 750,000 Images Online
• Key Word Searches
• Color Image Catalog



IMSI

IMS256

\$185

MAC055	Macromedia Freehand 8	\$785
MAC102	Macromedia Freehand 8 (Mac)	\$789
MAC123	DreamTeam & Freehand 8 Educational	\$399
MAC127	Macromedia Fireworks 2 (Mac)	\$349
MAC128	Macromedia Flash 4 (Mac)	\$535
ADO186	Adobe Go Live (PC)	\$529
ADO037	Adobe Go Live (Mac)	\$529
MFG026	Micrografx iGrafix Business	\$165

IMS257	IMSI MasterClips 3D Artist	\$69
IMS151	IMSI MasterClips 1,000,001	\$189
IMS106	IMSI MasterClips 500,000+	\$139
IMS134	IMSI MasterClips Web Art	\$69
MSS236	MS FrontPage 2000	\$169
MSS245	MS FrontPage 2000 Upgrade	\$85
NET155	Net Objects Fusion 4.0	\$535
ADO112	Adobe Pagemill 3.0 (PC)	\$149



Web Design Studio

A Complete Integrated Solution for Professional Web Designers

Macromedia's Web Design Studio offer provides Web designers and developers with the premier package of tools for creating the basic building blocks of interactive web sites: graphics, vector animation & sound, and code. With Dreamweaver, Fireworks, and Flash, you can visually create interactive Web sites that load fast and work great across different computer platforms and web browsers.

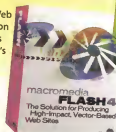
Web Design Studio includes everything you need to design and produce professional web sites.

- Dreamweaver is the solution for professional Web site design and production. It is the only tool to offer Roundtrip HTML between visual and source editing. Dreamweaver 3 takes productivity to a higher level with advanced table editing, deluxe site management tools, Dream Templates, and extensibility beyond your wildest dreams.
- Fireworks can be used to create feature graphics, buttons, animated banners and JavaScript rollovers to be included in a Dreamweaver HTML document. Optimize and slice your graphics before flowing them seamlessly into Dreamweaver.
- Flash is the standard for interactive vector graphics and animation for the Web. Web designers use Flash to create beautiful, resizable, and extremely compact navigation interfaces, technical illustrations, long-form animations, and other dazzling effects for their site. Graphics and animation will anti-alias and scale based on the viewer's screen size, providing high-quality viewing.

Includes:

- Macromedia Dreamweaver 3 • Macromedia Fireworks 3 • Macromedia Flash 4

WebSearch Code: MAC090



MAC090
\$919

GRAPHICS & WEB DESIGN

Director 7 Shockwave Internet Studio

(including Fireworks 2)

- Director unleashes your creativity with the only tools powerful enough to combine graphics, sounds, animation, text and video into compelling content that grabs your audience and delivers your message.
- Deliver applications and presentations quickly through easy-to-use visual metaphors
- Multiserver Server to build shared Web experiences and multi-player games

MAC112
\$1719

WebSearch Code: MAC112

Fireworks 3

Professional Web Graphics Design and Production

- Design fully editable Web graphics in an instant
- Easily add rollovers and hot spots, without writing code
- Save hours of production time with enhanced features
- Seamless integration with popular HTML editors and graphic tools
- Everything is JavaScriptable, so you can automate repetitive tasks



MAC132
\$329

Upgrade
MAC133
\$239

WebSearch Code: MAC132
WebSearch Code: MAC133

Flash 4

Produce High-Impact, Vector-Based Web Sites

- Deliver high-impact Flash sites by mixing and Synchronising MP3 streaming audio with interactive buttons and animation.
- Create distinctive user interfaces, site navigation and other Web applications without programming.
- Produce animated designs more efficiently than before with the optimised Timeline, smart motion guides and outline color mode.



MAC120
\$525

WebSearch Code: MAC120

Dreamweaver 3

Professional Web Site Design and Production

- Build cross-browser Web sites and maintain complete control over HTML
- Maximise productivity and streamline workflow between team members and between applications
- Extends to integrate with other Web applications
- Achieve complicated programming in a few simple steps



MAC134
\$489

Upgrade
MAC135
\$249

WebSearch Code: MAC134
WebSearch Code: MAC135

iGrafx DESIGNER

iGrafx Designer is the only complete toolset for technical and web graphics, with micron-accurate scale drawing and creative tools, and imaging graphics for publishing and the Web.

Features & Benefits

- Comprehensive annotation - annotate files with associative dimension lines, angular and radial dimensions, area, volume and perimeter along with call outs.
- Transparent vector effects - make colours, gradients or bitmap and tiled fills transparent or gradually transparent.
- Output interactive iGrafx Designer files as interactive JAVA applets for use with any web browser.
- View, name and manage objects and layers with the object and layer browser.
- Line styles for any type of technical illustration or fashion design.



PRICE DROP
15% OFF

MGF027
\$585

WebSearch Code: MGF027



iGrafx PROFESSIONAL

Create Professional-Quality Business Diagrams... Your Way!

To make an impact and get your point across you need to communicate ideas, information and data using clear, instantly understandable visuals that give you and your company an edge. Create flowcharts, process maps, network diagrams and organisation charts faster and easier than ever before.

Features & Benefits

- Automatic offpage connectors - makes multi-page printed diagrams easier to read. When published as HTML, connectors become hyperlinks.
- Web Links - All documents and web pages can be linked.
- Includes iGrafx Business.
- Multiple fonts, interline spacing, paragraphs and bullets within shapes - Create attractive, stylish charts that accurately reflect the information being communicated.
- Import diagrams created with Visio.



PRICE DROP
13% OFF

MGF025
\$585

WebSearch Code: MGF025





**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day Sydney*
• Next day*
• International*
* where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at
www.iswh.com.au



**No.1
SERVICE**

As an International
Company you have seen
more awards for products
and services than any
software mail-order
company



ADDRESS

Unit 13 Bradford Estate
70 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Open open
8.30am - 10.00pm (EST)
Monday to Friday
10.00am - 10.00pm (EST)
Saturday



**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



SALE

Special
Offers

EXPRESS ORDERLINE 1300 300 003

FREE Kai's Power Show* & Kai's Super Goo*

For a limited time with the purchase of ANY MetaCreations product!

* OEM bundle. Offer ends 31st December, 1999

Ray Dream Studio 5.5

The Essential Tool for 3D Design and Animation

Ray Dream Studio's best-of-class feature set, compatibility, value, ease-of-use, and performance make it the clear choice for every graphic artist, web designer, and multimedia producer. Special effects such as realistic depth-of-field, visible lights and lens flares, along with newcomers like fire, skies and motion blur, mean you can produce high-end, Hollywood-style output right from your desktop.



MET039

\$585

WebSearch Code: MET039

MetaCreations
The World's Leading Software Company

Painter 6

The world's indisputable leader for image creation

MetaCreations Painter 6 is the best version yet of the ultimate painting tool for graphic designers and fine artists alike.

- Exclusive tool set offers an extensive array of brushes, textures, canvas choices, and art materials
- Faithfully capture the subtleties of an artist's style for high-quality output for print and the Web
- Create your finest work using the next generation brush engine technology



MetaCreations
The World's Leading Software Company

MET038

\$729

WebSearch Code: MET038

Bryce 4

Bryce 4 is dedicated to designing, rendering and animating breathtaking natural 3D worlds and abstract 3D sculptures.

- Textured terrain export through real-time multi-resolution Export Lab
- Interactive movie previewing system
- Create stunning scenes with the tools available in the Sky Lab
- Use Bryce to build content for the Web, using a variety of authoring tools



MET032

\$455

WebSearch Code: MET032

MetaCreations
The World's Leading Software Company

Upgrades

MET040 Poser 4 Upgrade (Dual Platform)

\$239

MET041 Ray Dream Studio 5.5 Upgrade (Dual Platform)

\$209

MET042 Painter 6 Upgrade (Mac)

\$325

MET043 Painter 6 Upgrade (Win)

\$325

MET033 Bryce 4 Upgrade (Dual Platform)

\$225

For full information on our MetaCreations products, check out our website at www.iswh.com.au

National Geographic Maps



**NEW LOW
PRICE**

This unprecedented CD-ROM archive includes every fold-out map ever published by National Geographic magazine, plus engaging multimedia map tours, an interactive timeline that traces the evolution of mapping, key events in National Geographic cartography and the fascinating stories behind these very special maps.

- Contains maps developed for famous world leaders throughout the 20th century
- Search for maps by geographic location, theme, scale and more
- View, plan and zoom in on selected maps at diverse levels
- Print each spectacular full-scale map or map section in glorious colour
- Copy and paste maps into other documents



SCH005

\$89

SCHOLASTIC

WebSearch Code: SCH005

The Complete National Geographic



108 Years of National Geographic on CD-ROM

An indispensable resource for every home and school library, The Complete National Geographic includes all of National Geographic magazine's award-winning photographs, stories, maps* and charts, plus period advertising from the past century.

Finding specific articles, features or advertisements is easy with The Complete National Geographic's powerful search engine. You can quickly browse more than 175,000 pages of text and 1,200 magazine covers, locating specific articles by date, issue, topic, or title.

Each CD includes the search index for the entire collection. You are automatically pointed to the correct location of each article, feature or advertisement. It even references the printed issue, by month and page numbers!

Selected pages can be printed out, in colour or black-and-white, and articles can be bookmarked and returned to at a later date.

Features

- Unique historical archive on 30 CDs
- Entire search index on all CDs
- 178,567 spectacular images
- 9,048 fascinating articles
- 100 years of classic advertisements
- Over 175,000 pages of engaging text
- National Geographic's integrity and quality in a new digital medium



SCH001

\$199

SCHOLASTIC

WebSearch Code: SCH001

* supplement maps not included



OmniPage Pro 10 Upgrade

What's New in OmniPage Pro 10?

New OCR Engine - combines the OCR technologies from three award-winning OCR applications: OmniPage Pro, WordScan Plus and Recognita Plus. It's like having three pairs of eyes checking each page at once to dramatically improve accuracy. The result? Less editing. Less proofing. Less work. It's accuracy you really have to see to believe. Also, OmniPage Pro 10 incorporates additional dictionaries that increase accuracy recognition, especially on compound and non-English words. As a result, the program provides the highest level of OCR accuracy and reduces the number of errors by 30%, on average, over the previous version.

Voice Read-Back - reads OCR results back to users out loud.

OmniPage Web Personal Edition included - Caere's pioneering Web publishing software that converts multi-page documents to well-designed, fully hyper-linked Web sites.

New Simplified User Interface - a streamlined user interface makes the OCR process more intuitive and straightforward by providing a new tabbed toolbar, which allows users to select from three process modes: AutoOCR, Manual or OCR Wizard, each with their own toolbars.

Improved Font Rendering - new Font Matching scheme takes into account font metrics such as character aspect ratio, as well as the look of characters and the spacing of text lines.

Improved De-skew Technology - minimises distortion of the document image which often occurs during the page straightening process, thereby improving OCR accuracy. This is particularly helpful for users with sheet-fed scanners and those using automatic document feeders.

New Caere Scan Troubleshooter - assists users in resolving common scanning problems.

Improved OCR Preprocessor - now includes five levels of zoom that enable users to see as much of the original document as necessary to proof OCR results.

Auto-launch of Native Applications - users can automatically launch the applications to which their documents are being exported, including Microsoft Word and Excel.

Microsoft Windows 2000 Certified - OmniPage Pro 10 is among the first software applications to meet Microsoft's requirements for Windows 2000 certification.



OMN119
OmniPage Pro 10 U/G (OEM)
ONLY \$179
when purchased
with a scanner

OmniPage 10 U/G
(Upgrade from ANY
OCR Software)
OMN120
\$199

WebSearch Code: OMN120

Graphics & OCR

PageKeeper Pro 3.0

The Best Document Manager

PageKeeper Pro 3.0 is the only document manager to fully automate the time-consuming tasks of organizing and maintaining all your documents. Need a document fast? PageKeeper Pro works like a search engine and instantly finds all documents that meet your criteria.

Features:

- Automatically files documents with Smart Folders
- Automatically keeps track of edits
- Instantly finds any document
- Supports any file format
- Manages Web pages



OMN116
\$99

WebSearch Code: OMN116

OmniForm 4.0

Electronic Forms the Easy Way - Instantly!

Take any paper form, scan it with OmniForm, and wow! You've got an electronic form that you can fill out right on your computer screen! But that's only the beginning of the amazing versatility of your electronic form. You can store it for re-use, print it whenever you want, e-mail it, keep its data in a database - electronic forms are just plain better than the old-fashioned paper kind. And OmniForm is the easiest, best way to scan or create electronic forms.



OMN115
\$259

WebSearch Code: OMN115

OmniPage Pro Scanner Suite Upgrade

Everything you need for your scanner

Includes

- OmniPage Pro 9
- PageKeeper Pro 3.0
- Adobe PhotoDeluxe Business Edition
- Post-it Software Notes

More Accurate OCR

- Over 99% accurate*

- Ability to maintain layout of original page

- Superior integration with Microsoft Word

Automatic: File & Find

- Automatic document organisation with Smart Folder

- Automatic document importing with Folder Watch

Better Image Editing

- Hundreds of business templates for Web banners, direct mail and more

- Ability to print to Avery paper for labels, business cards and more

The Top Annotation Software

- You can add notes to scanned images, other documents and even put them on the desktop

**INCREDIBLE
VALUE**



Upgrade
OMN117
\$255

WebSearch Code: OMN117

* On laser quality documents
using standard fonts

OmniPage Web

OmniPage Web is the fastest, easiest way to convert multiple page paper documents into working Web sites. Using the award-winning OmniPage Pro OCR engine and the revolutionary new Logical Structure Recognition (LSR) technology, OmniPage Web outlines your scanned document and creates a complete, dynamic Web site with separate Web pages for each page, chapter or section. OmniPage Web automatically cross-links references and even creates a hyperlinked table of contents and navigation tools!

Preview your site in your favourite HTML browser or editor, then publish it to the Web - OmniPage Web makes the process of going from paper to the Web faster and easier than you ever thought possible.



OMN019
\$709

WebSearch Code: OMN019



We will not be
beaten on price!
We cut prices not
costs.



Make sure to ask
for your free gift
when ordering.



Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*



We aim to stock at
least 95% of ALL
the items we sell



Check our online
store at
www.bswh.com.au



As an International
Company we have vast
warehouses for products
and services that our
software mail-order
company



Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



Sales Lines open
8.30am - 10.00pm (EST)
Monday to Friday
10.00am - 10.00pm (EST)
Saturday



All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003

CD Phone Directory

Access to Over 8 Million Business & Residential Listings Australia Wide
Imagine how much easier and faster it would be if you had virtually every
Australian business & residential telephone number on
your own PC! Now includes Mobile Numbers,
International Codes, Fax Numbers, as well as:

- Gives instant access to over 8,000,000 business and residential listings across Australia
- Search by Company Name, Line of Business, Surname & Initial, Suburb, State & Postcode!
- BONUS Save \$5 on 013 charges

WebSearch Code: DTM011

Phonedisc

With Search by Phone Number!

A powerful tool for finding what you want and who you want in seconds! Imagine the advantages of a telephone directory that not only gives you much more information, but also gives it to you the way you want it!

- Search by Company Name, Surname, Suburb, State, Postcode or line of Business
- Includes fax number, mobile and government departments
- "Sounds-like" facility
- Allows printing and exporting of one record at a time
- Auto dialer facility
- Ideal product for cross referencing your phone bills and tracking debtors

WebSearch Code: DTM001

Wasting too much time on the road? Get LapLink Professional and get productive

LapLink Pro lets you work whenever and wherever it's convenient for you. When you need to share information between an office PC, a laptop, or your home PC while travelling or working away from the office, LapLink Pro will get you connected.

LapLink Pro sets the standard in usability and is the #1 rated choice for easy, speedy and reliable remote control and file transfer by mobile professionals and telecommuters.

- Single mode operation - no need to set "guest" or "host" modes
- Includes bonus Windows CE remote control software
- Adaptive compression automatically gives optimal speed over all connections
- Optimised for Windows 98
- Compatible with Windows 3.1, 95, 98, and NT
- Supports USB cable for faster file transfer
- Smart Install configures all devices automatically - no user intervention required
- Integrated scheduler for Windows 98, 95, NT
- Print redirection from remote PC to local printer, or to a remote PC's printer

WebSearch Code: LAP011



LAP011
\$169

Lotus Notes

What is Notes R5? Lotus Notes R5 is state-of-the-art e-mail, calendaring, group scheduling, Web access and information management - all integrated in an easy-to-use and customizable environment.

Key Benefits include:

Ease of Use Notes makes it easy to find, sort and manage all your work. Automated wizards and preset configurations make installation and e-mail setup easy too.

More than Mail Notes integrates your e-mail, calendar, address book, to-do list, and the Web - and streamlines daily information management. What You Need, When You Need It. A customizable Welcome Page summarizes your most important information in one display. Use the Bookmark Bar to create quick links to frequently needed information.

Lets You Work Anywhere Notes synchronizes data with your laptop and personal digital assistant (PDA) so you can take e-mail, appointments, to-dos, contacts and more on the road.

To find out what Lotus Notes R5 can do for your business, visit our website at www.iswh.com.au or call our team on 1 300 300 003.



WebSearch Code: LOT528

LOT528
\$125

Laplink Tech

Put the ultimate support and setup tools to work for you

LapLink Tech provides the tools you need to remotely support customers, set up and upgrade PCs quickly and defend against viruses - all in one complete solution. No matter where your customers are or where you work, LapLink Tech offers you the flexibility to support your customers whenever they need it. LapLink Tech is designed for Windows 95 and NT 4.0, and is completely compatible with Windows 98. It also works with any earlier version of LapLink for Windows or Remote DeskLink.

Its Remote Control and File Transfer capabilities mean you won't have to leave your desk to work with remote users. Disk cloning speeds system installation and upgrade tasks, while virus protection defends your system. Plus our industry-leading usability makes sure you gain benefits right away. Laplink offers all the key tools to make remote support and system setup a snap.

Features:

- Remote Control
- Simultaneous Voice Chat
- File Transfer
- Automated File Synchronization
- Print Redirection
- Security
- Cross-platform compatibility
- Disk Cloning
- Virus Protection - WinGuard

WebSearch Code: LAP009



LAP009
\$259

MSS569	MS Access 2000	\$535
MSS257	MS Access 2000 Upgrade	\$169
LOT015	Lotus Organizer 5.0	\$99
LOT002	Lotus Notes Desktop	\$149
TRA006	Tracker Maximiser 5.0	\$289
DDD001	Australia on Disc Business	\$329
DDD002	Australia on Disc Residential	\$329
DDD003	Australia on Disc Business & Residential	\$329

USR008	3Com Palm IIIx	\$599
USR007	3Com Palm V	\$119
NOR084	Norton Mobile Essentials	\$125
RMG212	SideKick 98	\$79
PRO529	ProComm Plus 32 4.7	\$249
ART058	Modem Share 32 - 1 Port	\$209
MSS161	Microsoft Exchange S.S & S Clients	\$1529
DTM002	DTMS Fax Pro	\$275



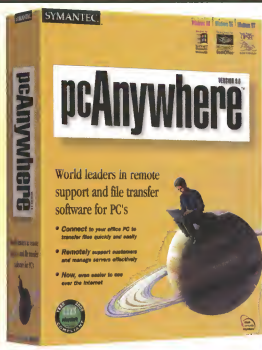
pcAnywhere 9.0 SYMANTEC

The #1 seller for fast, easy access to any PC

If you need to work from home or on the road, pcAnywhere lets you connect to your office PC to transfer files quickly and easily. Its special optimised design ensures the best possible performance at any connection speed. You can also run applications that reside on your office PC or a corporate server - a great feature for software that's too large to keep on your laptop or that can't be installed on external computers for security reasons. pcAnywhere supports a wide range of connection methods - including standard modems, ISDN lines, TCP/IP and IPX/SPX networks, direct cable, and infrared connection so wherever you are, you're sure to find one that meets your needs. And now, it's even easier to use over the Internet.

If you're an IT professional, pcAnywhere lets you remotely support users and manage servers effectively. Monitor and control remote laptop and desktop systems to troubleshoot problems. Deliver training materials and pre-configured software updates to multiple users. Manage LANs, WANs, and even enterprise-wide information systems.

Version 9.0 features an enhanced file transfer interface, powerful centralised management and control, greater security, and LDAP directory services. And you can access all pcAnywhere functions through one clean, consistent interface.



COMMUNICATION

WebSearch Code: SYM214

SYM214
\$209

TalkWorks PRO 3.0

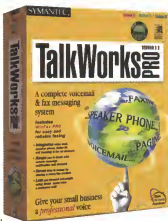
Give Your Small Business a Professional Voice

TalkWorks PRO from Symantec brings professional voicemail and fax messaging to home offices and very small businesses. Its integrated capabilities keep you in touch with your customers 24 hours a day.

With TalkWorks PRO 3.0

- Enjoy the full functionality of WinFax PRO.
- Get notification when a voicemail or fax message arrives.
- Create reports of incoming and outgoing calls.
- Save money by sharing a single voice modem and phone line across your entire business.
- Offer fax on demand to provide your customers with information any time of the day or night.
- Set up separate mailboxes for employees and fax on demand.

All these powerful features are accessible through an easy-to-use interface. There's even a mailbox setup wizard to get you up and running quickly. So if you need voicemail, message notification, call tracking, or fax on demand, give your small business a professional voice with TalkWorks PRO.



WebSearch Code: SYM224

SYMANTEC

SYM224
\$169

WinFax Pro 9.0

The world's #1 choice for hassle-free faxing!

WinFax PRO 9.0 software takes Symantec's industry-leading fax solution to new levels of flexibility, reliability, and ease of use.

With WinFax PRO 9.0

- Small businesses can look more professional by sending crisp laser-quality faxes.
- Workgroups can save money by sharing a fax modem and phone line through a non-designated fax host.
- It can also notify mobile users via pager or PCS cell phone as soon as an important fax arrives, or automatically forward faxes to another fax number or an e-mail address.

WebSearch Code: SYM191

WebSearch Code: SYM218

SYMANTEC

WinFax Pro 9.0
SYM191
\$125



Mobile WINFAX for the palm-computing Platform.

The world's leading fax software is now available for the Palm Pilot.

Mobile WinFax
SYM218
\$75

ACT! 2000

Complete Customer & Calendar Management

ACT! 2000 from Symantec is the award-winning leader in contact management software. It gives you instant access to detailed contact and account information, plus a complete history of your contact-related communications and help with managing your schedule efficiently.

Features

- Powerfully manage activities for entire accounts as well as individuals.
- Keep comprehensive, customisable contact information.
- Store notes from meetings and phone calls.
- Stay productive while on the road with Palm Pilot Link software (included).
- Utilise other email, fax, word processing, expense tracking, and business applications with ACT! 2000's seamless integration.
- Put the Internet to work for you with built-in Internet links.
- New "sales funnel" graphs help you manage your sales process more effectively.



ACT! 2000 even includes expert assistance from Dale Carnegie Training to help you turn contacts into sales. So get ACT! and get results!

WebSearch Code: SYM223

SYMANTEC

SYM223
\$159



We will not be
beaten on price!
We cut prices not
corners.



Make sure to ask
for your free gift
when ordering.



Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



We aim to stock at
least 95% of ALL
the items we sell



Check our online
store at
www.iswh.com.au



As an international
Company we have over
more services for products
and services than any
software mail-order
company



Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



Sales Lines open
8.30am - 6.00pm (EST)
Monday to Friday
10.00am - 3.00pm (EST)
Saturday



All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003

WinZip 7.0

The Ultimate Companion for
Internet Downloading

WinZip brings you the convenience of Windows to the use of ZIP files without requiring PKZIP and PKUNZIP. It features an intuitive point-and-click drag-and-drop interface for viewing, running, extracting, adding, deleting, and testing files ZIP, LZH, ARJ, and ARC files.

The Zip Advantage

Zipping safely compresses the data in your files, so that your files occupy less space. This allows you to save more time by speeding up file transfers. "Zipping" reduces the size of files, while "unzipping" restores the files to their original form, completely unchanged.

Internet Surfers:

WinZip makes it easy for you to access almost all of the compressed files you download from the Internet. WinZip features built-in support for Zip, TAR, gzip, Unix Compress, UUEncode, BinHex, and MIME files.

Key Features

- Tight integration with the Windows 95/98/NT shell
- Drag & Drop to or from the explorer, or ZIP & UNZIP without leaving the Explorer
- Drop files on a printer to print
- With the ease to use tool bar you have the convenience of Windows when Zipping
- Built-in PKZIP-compatible ZIP and UNZIP (PKZIP and PKUNZIP are not required)
- Built-in support for the popular Internet file format TAR, gzip, Unix

- Compress, Uncompress, Xencode, BinHex, and MIME
- Simplify file distribution by making files that unzip themselves
- Optional WinZip Wizard interface
- Works with ARJ, ARC, and LZH files
- Optional virus scanning support
- Supports Windows 3.1, 95, and NT
- 32 and 16 Bit versions Included

WIN119
\$65

Fix-It Utilities 99

New from Mijenix, the makers of ZipMagic, FreeSpace and PowerDesk comes a brilliant new product to keep your PC in tip-top condition. Fix-It includes a myriad of utilities that check, clean, protect and secure your PC (Win 95/98 and Win NT).

Fix-It Utilities includes:

- Crash Protection
- Disk Fixer
- Disk Defragmentation
- Smarter Drive Optimisation
- Clean & Optimise the Registry
- Hardware Diagnostics
- Bring back trashed files
- Virus Protection
- Year 2000 Tools
- Win 95, 98 & NT
- Emergency Disk Included
- PowerDesk, valued at \$59.95 bundled FREE
- From Mijenix the makers of ZipMagic
- Winner PC Week Best of Comdex Award
- Head to Head winner against Nuts & Bolts & Norton Utilities



Fix-It Utilities 99 includes just about everything that you could need... and it sells for under \$100! Even if you have Norton's Utilities you will immediately see the additional benefits you get from Fix-It Utilities 99.

MIJ001
\$85

WebSearch Code: MIJ001

CuteFTP

For Uploading Web Pages ...Fast!

CuteFTP is a Windows-based File Transfer Protocol (FTP) client that allows users to utilise the capabilities of FTP without having to know all the details of the protocol itself. This excellent FTP program has a lot more than just a pretty interface.

Key Features

- Drag and Drop Interface.
- Fast Upload and Download.
- Resume Upload and Download.
- Remote File Editing.
- Queue Transferring.
- Bookmarks Remote Directories.
- Clipboard Monitoring of FTP links.
- Force Upper/Lower/Preserve File Case.
- CuteFTP has an excellent array of features, including caching, stop command and cool interface. It is a must have upgrade that's definitely worth the download.
- CuteFTP version 2.0 is specially designed to take advantage of the Microsoft Windows NT and Windows 95 operating systems. Microsoft, Windows, the Windows logo, and Windows NT are registered trademarks of the Microsoft Corporation.
- Keep Alive "Noop" Command.
- Integrated HTML Editor.
- Powerful Macros that Work.
- Directory Compare for Web Site Maintenance.



WebSearch Code: GBS001

GBS001
\$79

VET Premium Anti-Virus

Virus Protection For All Platforms

Essential Protection

Virus protection has never been as essential as it is today. New viruses are continuing to appear at an ever-increasing rate and new types of viruses - for instance World macro viruses - regularly take the PC World by surprise. The Internet, intranets, networks, Email, shared disks and shared PCs all enable viruses to spread. Vet Anti-Virus Software provides you with the protection you need for your system, whether it is a stand-alone PC or a complex network of PCs in an organisation.



This combines all the advantages of Vet Net Surfer with the additional benefit of mailed quarterly upgrades - delivered to your home or office. The choice is yours - Vet Net Surfer with on-line upgrades, or Vet Premium with on-line and mailed upgrades. Both offer complete virus protection for you PC.

- Unlimited phone and email support
- Unlimited access to upgrades on-line
- Upgrades mailed quarterly direct to you



Vet Premium
VET007
\$89

WebSearch Code: VET007

Vet Net Surfer
(updates via Internet only)
VET006
\$75

WIN109	PKZip 2.6	.....	\$59	ADA070	Adaptex EZ SCSI 3.0	.....	\$135
ADA066	Adaptex Toast (Mac)	.....	\$139	POW006	Powerchute for Win NT	.....	\$129
MAC100	Mac Opener 2000	.....	\$145	SOL011	McAfee Dr Solomon's Std.	.....	\$69
STU030	Stuffit Deluxe (Mac)	.....	\$109	SOL041	McAfee Dr Solomons	.....	\$89
SOL075	Dr Solomon's Virex (Mac)	.....	\$69	MAN120	Turbo Browser	.....	\$85
QUA146	CleanSweep Extra-Strength	.....	\$85	ROB002	Robo Help Office 7.0	.....	\$1445
CON031	Conversions Plus 4.5	.....	\$259	VET010	Vet Enterprise 2-PCs	.....	\$139
QUI050	PaperClip	.....	\$29	VET012	Vet Enterprise 10-PCs	.....	\$399



Norton SystemWorks 2000 Professional Edition

Norton SystemWorks 2000 Professional Edition combines the worlds #1 utility suite with advanced tools for PC experts. Fix and prevent Windows problems, find year 2000 bugs, and clone entire systems - all for one great price. Don't take chances with your PC. Keep it working with Norton SystemWorks 2000 Professional Edition.

An incredible value, offering five award-winning products, plus advanced utilities, Norton 2000 and Norton Ghost for PC experts. Also included in SystemWorks 2000 Professional Edition is a free Bonus Pack.

Includes Professional Pack:

- Norton 2000
- Norton Ghost
- Plus Bonus Pack:
- Zip It (File Extraction & Compression)
- WinFax Basic Edition (PC Faxing)
- Norton Secret Stuff (Internet Email Privacy)
- Visual Page (Web Development Tool for building and managing web pages)

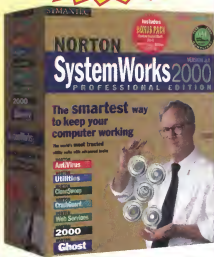
* Pay \$149 & receive \$50 cashback Offer ends 31 December '99. Call for full details.

Everything you need in one fully integrated suite:

- Norton AntiVirus 2000
- Norton Utilities 2000
- Norton CleanSweep 2000
- Norton CrashGuard 2000
- Norton Web Services



NOR110
AMAZING!
ONLY
\$99*



UTILITIES

Norton Systemworks 2000 Standard Edition

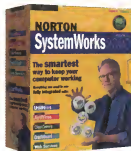
Norton SystemWorks 2000 for Windows 98/95 is the only fully-integrated and market-leading utility suite designed to protect your computer from viruses and crashes, solve problems, remove unneeded files, and update your applications.

Includes:

- Norton AntiVirus 2000
- Norton Utilities 2000
- Norton CleanSweep 2000
- Norton CrashGuard 2000
- Norton Web Services

* Pay \$129 & receive \$30 cashback Offer ends 31 December '99. Call for full details.

OVER
\$300 VALUE!



NOR109
AMAZING!
ONLY
\$99*



Norton AntiVirus 2000

The #1 Anti-Virus Software in the world

As always, Norton AntiVirus 2000 will run constantly in the background to keep your computer safe from viruses and it can be scheduled to automatically retrieve new antivirus definitions from Symantec as often as once a week.

Features:

- Graphical Alerts - New! Provides clear, easy-to-understand instructions on how to proceed when a virus is detected.
- Email Scanning - New! Scans incoming email attachments automatically for the most popular email products, preventing viruses from even entering your system.
- Compressed File Detection and Repair - Improved! Eliminates viruses hidden in multiple compressed layers automatically.
- Ease-of-Use - Improved! Provides increased integration with Norton SystemWorks.



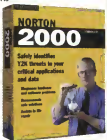
* Pay \$79 & receive \$20 cashback. Offer ends 31 December '99. Call for full details.

NOR113
\$59*

Norton 2000 v2.0

Safely identifies Y2K threats to your critical applications and data.

- Diagnosis hardware and software problems
- Recommends safe solutions
- Assist in file repair



NOR114
\$45

Norton Cleansweep 2000

Improve your PC's performance by easily removing un-needed programs and files. Provides automatic protection against accidental file deletion - no other clean up product is as safe.



NOR111
\$59

Norton Ghost Personal Edition

A powerful disk drive cloning and imaging utility that speeds up and simplifies PC system migration, hardware upgrades, hard disk backups and disaster recovery operations.



NOR106
\$119

Norton Utilities 2000

Norton Utilities 2000 is the market leading solution for fixing, maintaining and optimising PCs.



* Pay \$79 & receive \$20 cashback offer ends 31 December '99. Call for full details.

NOR112
\$59*

WebSearch Code: NOR114

WebSearch Code: NOR111

WebSearch Code: NOR106

WebSearch Code: NOR112



We will not be beaten on price!
We cut prices not corners.



Make sure to ask for your free gift when ordering.



Full range of delivery options:
• Same day, Sydney*
• Next day**
• International**
* where applicable



We aim to stock at least 95% of ALL the items we sell



Check our online store at
www.iswh.com.au



As an International Company we have won more awards for products and services than any software mail-order company



Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales 2015



Sales Lines open
8.30am - 6.00 pm (EST)
Monday to Friday
10.00am - 5.00 pm (EST)
Saturday



All prices include Sales Tax. Prices subject to change, see page 46 for terms and conditions.



EXPRESS ORDERLINE 1300 300 003

Snappy Deluxe

Get thousands of pictures from any source! Any thing your camcorder can see, any image on your VCR, any scene on TV and any action shot from your Nintendo, Sega, or Playstation can now be seen as a stunning high resolution picture on your PC.

Snappy Deluxe is the award winning, best selling video add on of all time. Just plug the module into your PC or laptop parallel port. Then connect your camcorder, VCR etc with the included cable. Watch your screen, and when you see a picture that you want, just click SNAP. It's that simple! Perfect for a thousand and one uses, such as desktop publishing, presentations, web pictures, PC photo albums, school projects or simply for having fun. You won't believe your eyes!

And Snappy Deluxe now allows you to record colour mini-movies with sound, and save them as AVI files (up to 2 frames per second).

The Most Award-Winning PC Video Product in History

Award-Winning Software Package Includes:

Adobe Photo Deluxe 2.0

Gryphon Morph 2.5

Kal's Power Goo SE

• Paint, title, and retouch images. Make professional newsletters, customise greeting cards, and much more!

• Hollywood's morphing magic, right on your PCI Morph brother into your dog or your friends into TV stars!

• Turn your friends and family into hilarious animated cartoons and caricatures.



WebSearch Code: PLAY03

Beeline

Beeline is an award-winning global automated search program that quickly gathers Internet results from the most popular web-based search engines to deliver complete and fast answers to search requests. Beeline understands plain

English requests.

- Find Information on the Web!
- Read the Latest News!
- Locate Email Addresses!
- Download the Latest Software!
- Save and export searches!
- Turn banner advertising off
- Keep track of Articles posted in Newsgroups!
- A spellchecker and a thesaurus are included to help you refine your search. Search queries and results are automatically saved allowing you to browse them offline or use them again at a later stage.

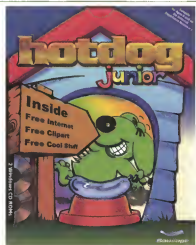
- Search over 40 search engines simultaneously!
- Beeline includes a powerful Auto-Update feature which checks if the search module is up to date. As Internet search technology evolves and new search engines become available, software updates will be made available on a regular basis which will update the Beeline search module automatically with one simple click. Your copy of Beeline will never be outdated!

WebSearch Code: BEE001

HotDog Junior

Let your kids create their own home on the Internet! HotDog Junior is a simple and fun software program for making Web Pages, designed especially for children aged 6 and up. In four basic steps HotDog Junior allows kids to quickly create and design their own Web Pages, and then publish them to the Internet.

Absolutely no experience is necessary! HotDog Junior leads you through each step. You can have a Web Page on the Internet in just five minutes. Also includes \$0,000 free Clipart Images and 50 hrs free Internet Access.



WebSearch Code: SAU001

Amorphium

Now anyone can create amazing 3D graphics! Amorphium lets everyone from school kids to graphic artists, from web designers to Hollywood animator, make stunning 3D graphics. Amorphium is easy to use, but it's also incredibly powerful, made by the same people who created the 3D technology for movies such as Terminator 2, Titanic and Star Wars Special Edition.

Create - mould 3D Images as if you were moulding clay. Push, pull, twist and tweak all in real time.

Animate - powerful animation tools let your creations jump, bounce and wiggle. Save your animations as movies or GIF files for the web.

Paint - add colours straight onto 3D shapes. Create textures, add shine, move lights, create shadows. It's easy with Amorphium.

Compose - Combine objects, pick backgrounds, even add fog and smoke to your scene. Then save it all in any standard file format (BMP, JPG, TIFF, GIF and many more).

Whether its for a presentation, web site or just for fun, Amorphium lets you create 3D graphics quickly and easily. (32MB RAM required).



WebSearch Code: PLAY02

PLAY03
\$419

BEE001
\$55

SAU001
\$65

PLAY02
\$389



PartitionMagic 5.0

Now the top-selling utility, that allows you to reclaim up to 40% of your hard disk & organise your hard drive, has got even better! PartitionMagic 5.0's new features makes it easy to eliminate inefficient storage methods that can cost you hundreds of megabytes of lost disk space.

New Features:

- Merge Partitions** - Users now have the ability to merge FAT and FAT32 partitions. This eliminates the need for copying your data to a separate partition prior to creating, moving, or resizing another partition. Merging partitions also eliminates time and steps because it speeds up the process of organising your data.
- Partition Conversions** - Users can now convert NTFS to FAT and FAT32, which adds more flexibility in converting partitions, along with the ability to convert primary partitions to logical partitions or vice versa. Additionally, users can now regain a primary partition to install a new OS, or change the manufacturer primary and logical partition settings on new computers.

Enhancements to both the interface and wizards, based on valuable customer feedback, includes:

- Addition of a new merge partition wizard.
- Option to hide wizards.
- Colour-coded file system types with a colour key legend.
- Instruction wizards which provide only task-oriented options.
- Combined "Prepare for new OS" wizard and a "Create New Partition" wizard into a new single wizard called, "Create New Partition" wizard. This wizard now assists users who are installing a new OS with specific options that helps them create a partition specific to that OS.

Ability to view a list of pending operations - Provides users with the flexibility to review the steps that will be processed before applying the changes.

Improved on-line help and error checking in partition tables - Provides users with the ability to go into their partition tables and fix or change errors. PartitionMagic 5.0 will now prompt users during startup with any problems in the partition table.



WebSearch Code: POW042
WebSearch Code: POW043

POW042
\$109

Upgrade
POW043
\$49

UTILITIES

Lost & Found

Restoring lost data is just a few keystrokes away

Rather than spending thousands of dollars to send your hard drive to a data recovery centre, Lost & Found lets you automatically recover and restore data after accidental (or even intentional) data loss, or from corrupted media caused by a disk crash or logical system failure.

What makes Lost & Found an easier, more effective data recovery system?

- Unlike other data repair and recovery software solutions, Lost & Found:
- Does not need to be installed prior to the recovery of lost or corrupted files.
- Does not alter, write to or attempt to repair critical sectors on the damaged disk, increasing the chances of a successful data recovery.
- Recovers your files even after reformatting, as long as you have not written over them.
- Performs a disk analysis and reports the odds of recovery via colour coding. Allows you to save data to a network drive.



POW041
\$109

WebSearch Code: POW041

Drive Image

The complete imaging solution for hard drive backups, upgrades and data recovery

Drive Image lets you easily create a compressed image file of an individual partition or an entire hard drive. This file can be stored on a network, JAZ, ZIP, CD-ROM or tape drive and then downloaded, to make quick work of backups, data recovery or upgrading to a new, larger capacity hard drive. With Drive Image, image files can be downloaded to drives of the same size or resized to fit drives of a different size and geometry for maximum flexibility.



CHK007
\$109

WebSearch Code: CHK007

Drive Image Pro 3.0

If It's not Drive Image - It's not an Exact Image!

Drive Image Pro 3.0 is a hard-disk imaging solution for IS professionals, service providers, and configuration centres.



CHK025
\$35 per user*

WebSearch Code: CHK025

* minimum 25 users

Second Chance

Wouldn't you like one?

Have you ever changed a system setting and found that it hindered your computer's performance? Or downloaded a file that caused problems for your system? Perhaps you have unsuccessfully tried to get rid of a program that partially installed. Or maybe you're not sure what happened, but your computer just is not working as well today as it worked yesterday.

SecondChance acts as a first line of defense against system errors by periodically taking "snapshots" of the system. That way, it's possible to return to when the system worked properly and easily undo harmful or unwanted changes with a click of the button. And getting another chance is what SecondChance is all about. Don't take chances with your sanity - get SecondChance.



WebSearch Code: POW036

POW036
\$109

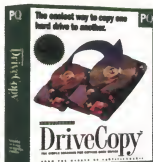
DriveCopy 2

The safest, easiest, and most affordable way to copy everything from your old hard drive to your new hard drive

There was a time when upgrading to a new hard

drive meant hours of downloading your data, applications, and operating systems to disk; then hours more of reinstalling everything to your new hard drive. If it all went well, you could be looking at a few days worth of work. Of course, there was always the risk of scrambling your data or losing it altogether in the process. Fortunately, now there's DriveCopy from PowerQuest. With a few simple steps, everything from your old hard drive is automatically copied to your new one without losing a single preference, setting, or byte of data. With DriveCopy you can now run your operating system, applications and data on a new, larger and faster hard drive.

So go ahead - update your dinosaur with a new high-capacity hard drive. With DriveCopy, it's never been easier or more affordable.



CHK022
\$49

WebSearch Code: CHK022



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at
www.iswh.com.au



**No.1
SERVICE**

As an international
company we have won
many awards for products
and services than any
software mail-order
company



ADDRESS

Unit 12 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Lines open
8.30am - 10.00pm (EST)
Monday to Friday
10.00am - 10.30pm (EST)
Saturday



**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



Santa Claus

Available
from
December 1st

EXPRESS ORDERLINE 1300 300 003

CHECK 2000 PC DELUXE



CHECK 2000 PC Deluxe

The Ultimate tool for beating the Millennium Bug!

CHECK 2000 PC Deluxe is the only integrated year 2000 testing tool that addresses all five "at-risk" layers of your PC. You can correct the BIOS, test the operating system and software programs, scan your data files, and flag data importing issues.

CHECK 2000 PC Deluxe gives you more:

- ✓ Helps find and correct the year 2000 hardware (BIOS) problems on the spot
- ✓ Flags problems in software programs, includes the world's largest database of remediation advice
- ✓ Lets you check new data from e-mail, internet, disks, CDs and other outside sources as often as you like
- ✓ Scans all the way down to individual cells in spreadsheets, databases, and other data files
- ✓ Helps you prioritize software and data problems for timely repair



Greenwich Mean Time

WebSearch Code: GRE002

"Today CHECK 2000 is established as the standard by which other year 2000 products are measured"
Microsoft Y2K Resource Centre.

GRE002
\$85

1 Test and Help Correct BIOS

A simple pass/fail screen tells you if your BIOS passes or fails the critical date tests. Then CHECK 2000 PC Deluxe will help correct the problems for you in 98% of BIOS types.

2 Check Your Operating System

CHECK 2000 will test your operating system, identify any 2-digit settings, and then recommend the changes you need to make. We check all of the popular operating systems, including: Win95/98, NT 4.0.

3 Keep Checking Imported Data

CHECK 2000 PC Deluxe identifies software programs that import and export data. Then Data Scanner finds date-dependent data so you can correct it.

4 Analyse Software Programs

Every application treats date-dependent data a little differently. CHECK 2000 PC Deluxe will do an inventory on your application programs - and show you which programs are most at risk (usually it's spreadsheets, databases, and schedulers). Year 2000 advice is provided on over 5,000 software programs. The knowledge base built into CHECK 2000 PC Deluxe recognises over 2000 programs.

5 Pinpoint and Prevent Data Problems

Drill all the way down to the individual cells in spreadsheets - and other data files - that could cause problems. Correct the data as it's revealed to you by CHECK 2000, without switching between software programs. You can run the Data Scanner at any time, to continually reveal any new date-dependent data that comes into your PC.

ZipMagic 2000

Take the hassles out of Zip file

Nowadays, it seems you can hardly turn on your computer without running into a compressed ".zip" file. But just using Zip files can be a pain, often requiring a separate utility to "unzip" the file. Wouldn't it be nice if you could wave a magic wand and make Zip hassles disappear forever? You can with ZipMagic! Only ZipMagic makes your files look and act like regular Windows folders. See for yourself why ZipMagic is called the compression utility for the next millennium!

Features:

- Use Zip files without unzipping
- Use Zip files like regular Windows folders
- 16 Types of archive/email formats
- Integrated graphics file viewer
- Wizards to help you zip/unzip
- Zip Backup Wizard
- Email plug-in for Outlook
- Email plug-in for Eudora
- Create and save executable Zip files
- Automatically place large Zip files on multiple diskettes (spanning)
- Check Zip files for data integrity and attempt to repair damaged Zip files
- Open encoded email files
- Stop and resume Internet downloads
- Can update itself over the Internet
- DOS Command line option
- View and create sub-folders in a Zip file



ZIP018

\$59

WebSearch Code: ZIP018

Diskeeper V5

The leading disk defragmenter for Windows NT

Why do you need Diskeeper?

Windows NT Server and Windows NT Workstation do not ship with disk defragmentation utility software as do other Microsoft operating systems. Diskeeper solves the issue of degraded performance on your NT Servers and Workstations by optimising the disk file accessing mechanism ensuring you get the best performance from your most critical of system resources.

New in 5.0

New and exclusively engineered Frag Guard safely monitors and PREVENTS the fragmentation of your most critical NT system files: the MFT and the paging files! The result? Maintenance-free top performance of your busiest system files!

Advanced Windows compatibility! Have a mixed Windows environment? Would you like maximum system performance right across the board? For the first time ever you can now remotely schedule the defragment of your entire Windows 95/98/NT network (from your desk)! Plus, Diskeeper 5.0 includes a brand new easy-operate GUI that gives you greater control of your network and makes group scheduling any number of drives simple and fast.



Single Workstation
PIX017

\$99

Please note: Check system requirements before ordering.
For full information on this product, visit our website at
www.iswh.com.au

WebSearch Code: PIX017
WebSearch Code: PIX018

Single Server
PIX018

\$489

GRE005	CHECK 2000 Client Server (4-client).....	\$369	PIX019	Diskeeper 5 - Single Workstation Upgrade	\$59
GRE001	CHECK 2000 PC	\$59	PIX020	Diskeeper 5 - Single Server Upgrade	\$235
GRE008	Check 2000 Check & Fix	\$25	PIX021	Diskeeper 5 - S-Pack Workstation.....	\$455
KIS001	KISS Modem Wizard 4.0	\$49	PIX022	Diskeeper 5 - S-Pack Workstation Upgrade.....	\$209
KIS042	KISS KeyView Pro	\$59	VCO002	System Commander Deluxe	\$125
UNI010	Uninstaller Deluxe 5.0	\$79	MCA146	PGP Personal Edition	\$69
CHK011	Star Trek DS9 Voice Print Security System	\$35	MCA053	McAfee Toolbox 2000	\$49
CON031	Conversions Plus 4.6	\$269	MCA158	McAfee First Aid 2000 Deluxe.....	\$69



MCAfee Office 2000

One Solution for Every PC Problem!

Now, you can protect, repair, secure, and optimise your PC with one integrated software package. McAfee Office is an assembly of award-winning, PC diagnostics and utilities tools that is the single solution for every PC problem:

VirusScan v4.02

#1 in Virus Detection and Removal

VirusScan features McAfee Macro Hunter technology to safeguard your PC from ALL viruses, and eliminate them before they can reach your system.

First Aid 2000 v6.02

Fixes & Prevents Problems - Automatically!

First Aid's extensive knowledge base of solutions solves tens of thousands of PC problems including software and hardware conflicts, configuration issues, multimedia glitches, Web connection hassles, and component bugs.

Nuts & Bolts v2.03

Fix up, Tune up, Clean Up and Speed Up Your System!

Nuts & Bolts protects your system and prevent crashes, while it diagnoses and alerts you to problems, assures program compatibility, rescues your files, fixes glitches, and enables you to operate at peak speed.

Y2K Survival Kit v1.0

Helps ensure that your PC successfully rolls over to the year 2000

Y2K Survival Kit searches its database of more than 1000 applications with known year 2000 issues and automatically downloads any Y2K program updates that are available via the Internet. It also checks and optimises Windows settings for operation beyond the year 2000.

Oil Change v2.5

Updates your software... Automatically!

Oil Change locates, downloads and installs bug fixes and updates for more than 6,500 of today's most popular programs via the Internet.

Uninstaller v3.12

Cleans Windows, Automatically

Uninstaller lets you identify the amount of disk space you want to free and then recommends the files for deletion, removing all of those unnecessary files that accumulate on your PC - Internet cache files, temp files, duplicate files, and more.

WebSearch Code: MCA160

\$50 CASHBACK

McAfee Office 2000

The All-in-One Solution

OVER \$400 VALUE!

Utilities included:

- VirusScan
- First Aid
- Nuts & Bolts
- Y2K Survival Kit
- Oil Change
- Uninstaller

MCAfee VirusScan 4.0

#1 Virus Detection and Removal

Using only the latest technology, VirusScan detects 100% of viruses from floppy disks, Internet downloads, email attachments, Intranets, shared files, CD-ROMs, and online services. Over 25 million people, 40,000 companies, and 80% of the Fortune 1000 use VirusScan to help keep things running smoothly and virus-free.

VirusScan Delivers 100% Detection

The threat of virus infection is now greater than ever! The need to protect your PC has become vital as there are now over 40,000 known computer viruses with more than 300 new viruses being created each month. VirusScan uses an array of scanning features to keep your system virus free. With new Hunter technology, VirusScan detects 100% of viruses in leading lab tests, including boot sector, file, multipartite, stealth, polymorphic, encrypted and macro-such as Word and Excel viruses. It even protects against the newest threats to data security: Office 97/2000 macro viruses.

Best Online Protection

If you surf the web you are at risk of contracting a virus! More than 70% of all virus infections are being transmitted via Internet downloads and e-mail attachments. VirusScan provides powerful protection for anyone on the web by scanning all Internet down-loads and e-mail attachments to stop viruses before they infect your system.

Easy to Use

VirusScan features an intuitive point-and-click interface for both scanning and configuration. It also features hands-free infection repair for automatic cleaning of complex and multiple infections. McAfee's new ScreenScan utility automatically launches scans whenever your screen saver is active. Our electronic virus encyclopedia and calendar deliver expert information on the latest viruses.

Always Up-to-Date

McAfee's AVERT (Anti-Virus Emergency Response Team) labs are located around the world to hunt down and provide cures to the latest virus emergencies at any time of the day or night. McAfee also offers a convenient and automatic way to update VirusScan with SecureCast by pushing upgrades and updates* directly to your desktop, eliminating the time and effort associated with many other anti-virus products.

The World's Best Support!

McAfee offers FREE* updates for the life of the product. And, if you ever have a problem McAfee offers the most qualified technical support technicians in the industry, as well as free online support*-available 24 hours a day, 7 days a week.

\$60 CASHBACK**

VirusScan

#1 Virus Detection and Removal

VirusScan

McAfee

Features:

- Auto 60 Minutes Update Downloads
- Uninstaller
- Security Enhanced Features
- System Monitoring for 95

\$69

WebSearch Code: MCA070

Also available:

MCA076 McAfee VirusScan Deluxe.....\$99

** Offers ends 31st December 1999

Modern and Internet access required for electronic downloads

MCA070

\$69



**PRICE
PLEDGE**

We will not be
beaten on price!
We cut prices not
corners.



**FREE
GIFT**

Make sure to ask
for your free gift
when ordering.



**FAST
DELIVERY**

Full range of
delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



**MASSIVE
RANGE**

We aim to stock at
least 95% of ALL
the items we sell



**ONLINE
SHOP**

Check our online
store at
www.iswh.com.au



**No.1
SERVICE**

As an international
company we have won
more awards for products
and services than any
software mail-order
company



ADDRESS

Unit 13 Bradford Estate
10 Bradford Street
Alexandria
New South Wales
2015



**OPENING
HOURS**

Sales Lines open
8.30am - 10.00pm (EST)
Monday to Friday
10.00am - 10.00pm (EST)
Saturday



**TERMS &
CONDITIONS**

All prices include Sales
Tax. Prices subject to
change, see page 46 for
terms and conditions.



EXPRESS ORDERLINE 1300 300 003

MAUS Employee Manual

Create a Customised Employee Manual

MAUS Employee Manual is the simplest way to create a handbook encompassing all of your organisation's employee policies and procedures. It comes complete with sample policies that you can use, in addition to all the important forms you may need.

The program's unique step-by-step process will ensure that your business has its own customised manual, protecting it from all-too-common litigation in areas such as Unfair Dismissal and Sexual Harassment. Protect your business today!

- Helps fulfil your legal obligations.
- A Step-by-step Questions & Answers format.
- Comes complete with over 70 policies, procedures and forms.
- Improve productivity and motivation amongst all employees.
- No expensive consulting, royalty or commission fees.
- Publish your manual in hard copy and on your network or intranet.

Policies Included

- Overtime Policy
- EEO
- Sexual Harassment
- Wages & Salary
- Sickness Benefits
- Maternity Leave
- Employment Conditions
- Annual Leave
- Anti-Discrimination
- Termination

WebSearch Code: MAU011
WebSearch Code: MAU013



MAU011
\$169

MAUS HR Suite

Job Descriptions
+
Performance Review
+
Employee Manual

MAU013
\$469

MAUS Consultant's Pack

Become a successful Business Planning Consultant

Used by 1000's of Accountants and Consultants, the MAUS Consultant's Pack will give you the forms, tools and know-how to establish a successful Business Planning Consultancy overnight. Includes information on setting up your consultancy service, promoting and costing your services, impressing your clients and a step-by-step guide for every assignment. Software contains over 80 pages of forms and management question checklists, overheads for training, sample proposals, press releases, advertisements and much more!

Includes:

- MAUS MasterPlan Consultant's Edition
- New customisation features
- Consultant's Guide to Business Planning
- Unique Consultancy Software
- Questionnaires for clients
- Complete training manual

WebSearch Code: MAU003



MAU003
\$469

MAUS Stockmarket Plus

Easy Start Sharemarket Software

Over 5.5 million Australians are now investing in the stockmarket....grab your slice of the action!

3 Great Reasons to Choose MAUS Stockmarket Plus

- 1 Portfolio Manager - Records every aspect of your share portfolio you'll ever need in an easily accessible format.
- 2 Charting & Query Tools - Pinpoint new and exciting investment opportunities using the user friendly charting and query functions.
- 3 Instant Tax Reports - Save literally hours of frustration at tax time using the automatically generated Australian Tax Reports.

Key Benefits

- Professional investment advice in simple English
- Manage stocks, personal finances, property, etc
- Track investments in any ASX listed company
- Download stock prices for fast, accurate analysis

WebSearch Code: MAU007



MAU007
\$169

MAUS Stockmarket Plus...."is ideal for both novice and experienced investors who require a package to keep track of their stockmarket investments...."

Seldom does a software package completely outclass competitors, offering users a clearly superior product in terms of sophistication, simplicity and obvious attention to detail"

Review of core software - Personal Investment Magazine, 1997

MAUS Stockmarket Plus...."is specifically designed for monitoring a share portfolio and has the added advantage of providing analytical tools as well as keeping the records you need"

Review of core software - Editor of Money Section (SMH 17/9/97)

MAUS Debt Collector

The easy approach to debt collection

MAUS Debt Collector is a complete debt collection system which automatically mail merges reminder and demand letters, reminds you of phone calls and action to take, and prompts you step-by-step through the entire debt collection process. To monitor your success, this revolutionary new product includes a unique graphing and reporting feature to quickly assess your current debtor position.

Key Benefits

- Automatically sends 30, 60 and 90 day reminder letters
- Stand alone contact manager stores all debtor details
- Includes professional letters, legal documents & advice
- Reduce bad debts
- Links Directly to MYOB, Quickbooks and most accounting systems.

WebSearch Code: MAU009

**COMPATIBLE
WITH MYOB,
QuickBooks &
MANY MORE!**



MAU009
\$169



MAUS MasterPlan Pro

Business and Marketing Plans the Easy way!

MAUS MasterPlan is the easy way to create professional Business and Marketing Plans. A simple question and answer format leads you through the entire planning process, allowing you to analyse, improve and grow your business. The award winning software creates full financial forecasts, strategies and graphics all at the click of a button.

The new MAUS MasterPlan has a broad range of new features specifically designed to meet the needs of Australian users in both product and service industries. Topics covered include Sales Analysis, Market Analysis, SWOT Analysis, Marketing Plan, Financial Plans and much more. With MAUS MasterPlan, your Business Plans will be more effective, more impressive, and will greatly improve your chance of success!

Enterprise Edition now available

Key Benefits

- Includes 5 User licence
- Network & email ready
- Planning system for multiple managers
- Customise the software to suit



MAUS MasterPlan
Enterprise edition
MAU014

\$459

WebSearch Code: MAU014

Key Benefits

- Create Business & Marketing Plans easily
- Simple question and answer format
- Creates full financials and graphs
- Suitable for business people of all levels

WHAT THE PRESS ARE SAYING

"The brilliance of this system is that you're led through the entire process step by step... the results will be as good as anything a professional would have provided for you"



000000 6/6 Ease of Use

000000 5/6 Features

000000 5/6 Value for Money

000000 6/6 Overall

PC Authority (January 1999)



MAUS MasterPlan for Windows -
Level 2 Professional
AUSS01

\$169

WebSearch Code: AUSS01

MAUS MasterPlan & Action Planner

Ideal for anyone developing a Business Plan AND serious about implementing it. With direct links to MasterPlan, MAUS Action Planner breaks up your plan into short term objectives, creating weekly and monthly Action Plans for each employee. Set employee tasks, monitor performance and generate reports all at the click of a button. This is the ultimate Business Planning package!

Key Benefits of Action Planner

- Use your Business Plan in day to day operations
- Sets tasks, goals and KPI's for employees
- Reports and graphs staff performance
- Direct links between the software



THE
ULTIMATE
BUSINESS
PLANNING
PACKAGE



SAVE \$30

Buy Both & Save
MAU010

\$308

WebSearch Code: MAU010

MAUS Performance Review

For fast, effective employee appraisals!

Described by PC Authority as "one of the first products any manager should load onto their PC", MAUS Performance Review will help you create accurate, personalised employee reviews in minutes!

Simply choose from the dozens of performance criteria such as initiative, leadership, problem solving ability, and sales skills... to name just a few! Next, use the simple 1 - 5 grading system to rank your employees in each area.

MAUS Performance Review will then support your ratings with clear, effective text...

...It's that fast. It's that easy!

Key Benefits

- Save 50-90% of the time to write employee reviews
- Simple step-by-step approach
- Record ongoing problems and achievements
- Accurate, personalised reviews
- Clear, natural text flows



MAU004

\$169

WebSearch Code: MAU004

MAUS Job Descriptions & Performance Review

WHAT THE PRESS ARE SAYING:

"Job Descriptions offers 3,500 professional descriptions and Performance Review gives a list to follow when judging staff performance."

Sydney Morning Herald
(18th August 1998)

"...Ideally designed to be used in conjunction with job interviews, HR planning and annual staff reviews"
The Age (25th August 1998)

"...simple, affordable, revolutionary"
Instore Magazine (September 1998)

000000

6/6 Value for Money

PC Authority (October 1998)



PC
USERS BEST
PRODUCTS
OF 1998



SAVE \$30

BUY BOTH AND SAVE
MAUS Job Descriptions &
Performance Review
MAU006

\$308

WebSearch Code: MAU006

MAUS Job Descriptions

Write job descriptions in minutes!

MAUS Job Descriptions will help you create clear, concise job descriptions in minutes!

Simply choose from the thousands of built-in jobs and edit or even combine duties from different jobs. Next, use the simple question and answer approach to address the physical and educational requirements, work environment, qualifications and supervisory responsibilities.

MAUS Job Descriptions will then take your answers and write a comprehensive job description that's fully customised to your organisation...

...It's that fast. It's that easy!

Key Benefits

- Create job descriptions in minutes
- Over 3,500 sample job descriptions to choose from
- Hire the right people
- Improve productivity
- Protect your organisation against unfair dismissal claims



MAU005

\$169

WebSearch Code: MAU005



PRICE PLEDGE
We will not be beaten on price!
We cut prices not corners.



FREE GIFT
Make sure to ask for your free gift when ordering.



FAST DELIVERY
Full range of delivery options:
• Same day, Sydney*
• Next day*
• International*
*where applicable



MASSIVE RANGE
We aim to stock at least 85% of ALL the items we sell



ONLINE SHOP
Check our online store at
www.iswh.com.au



No.1 SERVICE
As an International Company we have won more awards for products and services than any software mail-order company



ADDRESS
Unit 13 Bradford Estate
19 Bradford Street
Alexandria
New South Wales 2015



OPENING HOURS
Sales Lines open
8.30am 'til 6.00 pm (EST) &
Monday to Friday
10.00am 'til 3.00 pm (EST)
Saturday



TERMS & CONDITIONS
All prices include Sales Tax. Prices subject to change, see page 46 for terms and conditions.



EXPRESS ORDERLINE 1300 300 003



Dragon Naturally Speaking Preferred v4

Continuous speech recognition Ground breaking technology, award winning performance

Dragon Naturally Speaking is the world's first and foremost software product that recognises and creates text from normal continuous speech. Dragon Naturally Speaking is acclaimed in competitive reviews for its accuracy, performance and ease of use. Just talk to your PC naturally, at a conversational pace. Dictate entire paragraphs at a time. Write email messages, create reports, draft letters, and edit proposals just by speaking.

Top Features

- **High Accuracy** - PC Magazine reported Dragon Naturally Speaking "achieved 98 to 99% accuracy" in competitive testing!
- **Very Large Vocabulary** - A vocabulary of 250,000 terms and more than 160,000 active words assures that: What you say is what you get.
- **Control Your Desktop** - Open applications from the Start menu, switch from one application to another, and give commands like "Start Internet Explorer" by voice.
- **Multiple User Support** - Different users can share the same program by creating and storing their voice files on the same computer.
- **Fast Setup** - Learns your voice in just a few minutes so you can be up and running quickly!
- **Broad Compatibility** - Dictate into virtually any Windows application, including Microsoft Word 97 & 2000, Corel WordPerfect 8 & 9, America Online, and Lotus Notes.
- **Internet-Friendly** - Browse the Web and use hotlinks by voice, when using Microsoft Internet Explorer 4.0 & 5.0. Talk into chat rooms at up to 160 words per minute!



DRG009

\$319

WebSearch Code: DRG009



Dragon Naturally Speaking Mobile

Continuous speech recognition for people on the move

Create text anywhere

Dragon Naturally Speaking Mobile is the complete speech recognition system for people on the move.

- Holds up to 40 mins of continuous speech on built-in memory cards.
- An additional 80 mins can be stored on removable memory cards.
- Speak at up to 160 words per minute.
- File your recordings into folders for ease of use.



Don't Be Chained To Your PC. Talk To Your PC Anytime Anywhere.

Its so easy!!



Press 'Record' button and speak into the recorder's built-in microphone.



Select which recordings you want transferred to the PC.



Connect the recorder to your PC using the included cable.



Press 'Transcribe' and your recorded speech appears as the text on your screen and in your document.

WebSearch Code: DRG006

DRG006

\$439

DRG008	Dragon Naturally Speaking Standard v4.0.....	\$179	MSS023	MS Project 98	\$739
DRG010	Dragon Naturally Speaking Essentials v4.0.....	\$89	MSS024	MS Project 98 Upgrade	\$299
AUS294	TypeQuick (CD-ROM).....	\$75	MGF120	MicroGrafX iGrafX Process.....	\$1769
AUS295	TypeQuick (3.5").....	\$75	VIA124	Learning MS Excel 2000 (Intermediate) CD	\$59
TQA004	TQA Quality Assurance	\$339	VIA132	Learn MS Outlook 2000 (Advanced) CD	\$59
TQA002	TQA Quality Manager.....	\$419	VIA134	Learning PowerPoint 2000 (Advanced) CD	\$59
TQA003	TQA Quality Assurance & Manager	\$439	VIA103	Teach Yourself PC Maintenance Video	\$79
VIA123	Learning MS Word 2000 (Intermediate) CD	\$59	VIA129	Kids to Whiz Kids 4 CD-Pack	\$75



MCSE NT4 Certificate Interactive CD-ROM Tutorials

Essential if thinking of becoming a Microsoft Certified Systems Engineer NT4

This series of interesting and effective CD-ROM tutorial provides you with your own virtual classroom teacher along with hands-on tutoring covering all areas of NT4. Each CD is equivalent to 6-8 hours of instruction. This series of CD have been expertly designed to cover all essential areas of NT4 along with preparing you for becoming an MCSE. Just look at what each CD covers. Buy the complete course and save over \$749.

Course Units Sold Separately:

Exam* 70-058, Implementing and Supporting Microsoft NT Networking Essentials:

VIA057 NT4 Networking Essentials Vol 1\$129

VIA058 NT4 Networking Essentials Vol 2\$129

Exam* 70-068, Implementing and Supporting Microsoft NT 4, Server in the Enterprise:

VIA059 NT4 Enterprise Vol. 1\$129

VIA060 NT4 Enterprise Vol. 2\$129

VIA061 NT4 Enterprise Vol. 3\$129

VIA062 NT4 Enterprise Vol. 4\$129

Features

- Want to gain a valuable computer qualification?
- Essential qualification for most computer engineering jobs
- Each CD is equivalent to 6-8 hours of training
- Purchase the complete sets and SAVE

Exam* 70-067, Implementing and Supporting Microsoft NT Server 4:

VIA063 NT4 Server Vol. 1\$129

VIA064 NT4 Server Vol. 2\$129

VIA065 NT4 Server Vol. 3\$129

Exam* 70-073,

Implementing and Supporting Microsoft NT Workstation 4:

VIA066 NT4 Workstation Vol. 1\$129

VIA067 NT4 Workstation Vol. 2\$129

VIA068 NT4 Workstation Vol. 3\$129



**ELECTIVES
AVAILABLE!**

VIA056

\$799

BUSINESS DEVELOPMENT

WebSearch Code: VIA056

Microsoft Office 2000 Training

Work Smarter, Not Harder

Now that Microsoft Office 2000 has arrived, learn the tricks that will help you get the most out of this fantastic new office package. There are so many new features in Microsoft Office 2000 a comprehensive training package will ensure the sky is the limit for your productivity.

The training package has now increased to a fantastic 7 interactive programme set, featuring a vast range of tricks, shortcuts and powerful features. You can get the Office 2000 Training in either CD or video format, and covers Word 2000, Excel 2000, Access 2000, Windows 98, Outlook 2000, PowerPoint 2000 and Internet Explorer 5.

When time is money, save yourself a heap of cash - buy Microsoft Office 2000 Training!



Multimedia
VIA116

\$99

Video
VIA117

\$89

WebSearch Code: VIA116

WebSearch Code: VIA117

Teach Yourself WordPerfect Office 2000

Get the most out of your software

Learn all the time savers of the new Corel WordPerfect Office 2000. This pack includes all the basics to get you up and running and more advanced features to help you work more efficiently. A complete set of 5 interactive multimedia CD tutorials in 1 package. Great training, great value.

Includes:

Teach Yourself WordPerfect 9

Teach Yourself Quattro Pro 9

Teach Yourself Corel

Presentations 9

Teach Yourself

CorelCENTRAL 9

Teach Yourself Dragon

Naturally Speaking



VIA111

\$99

WebSearch Code: VIA111

Teach Yourself Beyond Office 2000

A four in one training pack that covers all the Office 2000 non-core products. Learn how to add a contact in Outlook 2000, Scheduling, how to insert clipart into PhotoDraw 2000 and learn how to create custom colours in FrontPage 2000. Four great packages in one - great value.

Includes:

Teach Yourself PhotoDraw 2000

Teach Yourself Outlook 2000

Teach Yourself Publisher 2000

Teach Yourself FrontPage 2000



VIA110

\$79

WebSearch Code: VIA110

Teach Yourself Web Page Publishing 2000

Learn all about HTML programming and get your information on the web faster and looking more professional. Learn to add backgrounds using FrontPage 2000, downloading an image using HTML and create a web page with HTML code and shows how a HTML table created in Notepad converts to a web page.

Includes:

Teach Yourself FrontPage 2000

Learning HTML Vol 1

Learning HTML Vol 2

Learning HTML Vol 3



VIA119

\$79

WebSearch Code: VIA119

* Audio CD Player required

All orders are subject to our full terms and conditions of sale. If you would like to see a copy of our terms and conditions of sale prior to purchasing, please call our customer service department on the number below.

ORDERING: All prices and offers are subject to change and availability. Errors and omissions excepted. All prices include Sales Tax. We do not charge credit cards until the goods are available for despatch. Please allow for working days for cheque clearance. Goods ordered by fax or post will be charged at the current price on the day of receipt. For out of stock items, delivery dates given are only estimates.

CREDIT ACCOUNTS: Accounts may be opened for Govt. Depts, Education and selected incorporated businesses, subject to status. Initial order value to open accounts must be in excess of \$500. Credit account orders are only accepted on official stationery by fax or post. Credit accounts must be paid strictly within 30 days, and we reserve the right to withdraw credit facilities.

WARRANTY AND RETURNS: Only Australian sourced goods are supplied. Goods are not supplied on a final basis, please check specification and compatibility with the manufacturer prior to purchasing. Although our staff can offer advice, they cannot confirm compatibility. In the case of faulty goods, please contact our customer service department who will make arrangements for replacement. Such arrangements may involve you dealing with the manufacturer directly. If, within 30 days of purchase, but before opening the product, you decide the product is unsuitable please call us to arrange a return number. We will refund the cost of the item plus a 15% restocking fee. We cannot accept non-faulty opened software for return, under any circumstances. All returns must be authorised by us, and must be returned in suitable packaging, bearing our return number on the outside.

Returns not complying with these terms will be refused. Where manufacturer offers a money back guarantee, this will normally involve you sending the product back directly to the manufacturer, who will process the refund themselves.

PRICE PLEDGE: Refers to Australian products available ex-stock. We will beat the advertised total cost (including delivery) not selling below our cost price. We reserve the right not to beat prices of imported, and of line or OEM items, and will not beat prices that have been printed incorrectly. The price pledge is only available at the time of purchase.

SPECIAL OFFERS AND FREE GIFTS: All special offers are subject to availability and must be in promotional packaging (packaging may refer to 'Special offers' or 'Free gifts'). All photographs are for identification purposes only. Please remember to choose a free gift when ordering. If no gift is specified, none will be sent.

EXPRESS ORDERLINE 1300 300 003

Microsoft Visual Studio 6.0

Everything you need to quickly build Web- and Windows-based solutions for your developing world.

Product/Components	Description	Pro.	Ent.
Microsoft Visual Basic 6.0, Visual C++ 6.0, Visual FoxPro 6.0, Visual InterDev 6.0, Visual J++ 6.0, MSDN Library Special Edition	The complete suite of Microsoft Visual Tools.	•	•
Enterprise Visual Database Tools	Visually design databases and views, and create and test stored procedures for Microsoft SQL Server 6.5+ and Oracle 7.0+ databases.	•	•
Microsoft BackOffice 4.5 Developer Edition (for Windows NT only)	Build Windows NT-based solution that can be accessed from Windows-based or Web-based clients and integrated in enterprise environment with selected server technologies form the Microsoft BackOffice family. The Development License for Microsoft BackOffice Server 4.5 includes Microsoft SQL Server, Microsoft Exchange, Microsoft SNA Server, Microsoft Site Server, Microsoft Systems Management Server and Windows NT Server.	•	•
Team Support	Microsoft Visual SourceSafe version control system version 6.0, Visual Component Manager, and Microsoft Repository.	•	•
Application Design Tool	Design multi-tier applications with Visual Modeler.	•	•



WebSearch Code: MSS054
WebSearch Code: MSS053

Visual Studio Pro 6.0
MSS053
\$1695



Visual Studio Pro 6.0
U/G
MSS054
\$859

Visual Basic 6.0

Build powerful applications fast!

Microsoft Visual Basic 6.0 is the most productive tool for quickly creating fast business solutions.

With its Rapid Application Development (RAD) environment, developers can quickly create and deploy super-fast client/server applications, plus easily develop Web applications.

Visual Basic is the leader in RAD with its visual user interface (UI) designer providing developers with intuitive drag-and-drop UI creation. It also has many pre-built components and fast creation of custom components that can be either client or server based.

FROM
\$159



Visual C++ 6.0

Visual C++ 6.0 is the most productive C++ tool for optimised high-performance Windows and Internet development.

It is also a tool of choice for creating scalable, multi-tier corporate applications where performance and reliability are critical.

Key Features

- Make changes during your debugging session and continue on without rebuilding.
- Speed development time and write less code with on-the-fly syntax and programming assistance.
- Add a variable or method to a class, and it's reflected immediately.
- Up to a 30 percent faster compile time.

FROM
\$155



WebSearch Code: MSS057



Learning Edition
MSS057
\$159

WebSearch Code: MSS062



Standard Edition
MSS062
\$155

Microsoft Windows NT Server 4.0

Key Features:

- lower operating costs
- leverage your existing systems
- globally manage users and security from a central location
- reduce communication costs by using a VPN to dial in via the Internet
- create professional-quality Web sites easily
- build and deploy powerful intranet applications quickly
- manage all Web sites across an entire network from a single location



Microsoft Windows NT Workstation 4.0

Powerful Performance and Reliability

Key Features:

- ease of use
- secure, easy access to the Internet and Corporate Intranets
- improved network integration
- improved management features
- mobile computing
- multimedia and graphics improvements
- application programming interfaces and additional features



WebSearch Code: MIC463
WebSearch Code: MIC583

(+ 5 Client)
MIC463
\$1245

(+ 5 Client) Upgrade
MIC583
\$499

WebSearch Code: MIC464
WebSearch Code: MSS048

MIC464
\$459

Upgrade
MSS048
\$225

MSS055	Microsoft Visual Studio Enterprise 6.0	.....	\$2575
MSS061	Microsoft Visual Basic Enterprise 6.0 Upgrade	.....	\$1159
MSS059	Microsoft Visual Basic Pro 6.0 Upgrade	.....	\$415
MSS058	Microsoft Visual Basic Pro 6.0	.....	\$799
MSS064	Microsoft Visual C++ Pro 6.0 Upgrade	.....	\$399
MSS063	Microsoft Visual C++ Pro 6.0	.....	\$829
MSS056	Microsoft Visual Studio Enterprise 6.0 Upgrade	.....	\$1699
MIC802	Microsoft NT TerminalServer + 5 Client	.....	\$1975
MSS245	Microsoft FrontPage 2000 Upgrade	.....	\$85
MSS236	Microsoft FrontPage 2000	.....	\$169
MSS246	Microsoft Publisher 2000 Upgrade	.....	\$119
MSS247	Microsoft Publisher 2000	.....	\$149
MSS195	Microsoft SQL Server 7 & 5 Clients	.....	\$2169
MIC493	Microsoft Win NT Server 4.0 & 10 Clients TIU	.....	\$679
MSS256	Microsoft BackOffice Server 4.5 & 5 Clients U/G	.....	\$2349
MIC762	Microsoft Windows 98 2nd Edition	.....	\$315

Microsoft Windows 98 Second Edition

...your productivity and redefine your PC's possibilities using the Microsoft Windows 98 operating system. It provides full Internet integration, optimal performance and support for the latest entertainment and accessory options.

Microsoft focused on advancing Windows 98 in the following areas with the release of Windows 98 Second Edition:

Making it work better by enhancing hardware support and improving the initial PC user experience.

Delivering home networking capabilities through Internet Connection Sharing, which enables multiple users to seamlessly and securely access the Web at the same time, using a single shared Internet connection.

Delivering an improved online experience with Microsoft Internet Explorer 5 and Microsoft Windows NetMeeting conferencing software version 3, which provides users with a fast and easy way to use browsing and Internet conferencing software.

Key new features and enhancements:

Internet Explorer 5, the new version of Microsoft's award-winning browser software, is included.

Internet Connection Sharing enables multiple users to seamlessly and securely access the Web simultaneously via a shared Internet connection.

NetMeeting conferencing software version 3, the new version of Microsoft's real-time collaboration and conferencing client, introduces a smarter user interface, data conferencing security, enhanced standards support and more.

Enhanced 1394 support supports key controller interface protocols.

Advanced Configuration and Power Interface (ACPI) advancements deliver hardware optimisations and

more granular control over settings on a device-class basis.

- High-bandwidth modem support delivers driver support for leading ADSL modems.
- USB improvements include the capability to work with devices on a per-device rather than a per-port basis.
- WDM modem support supports USB modems and enables hardware vendors to write a single WDM modem driver for Windows 98 and Windows 2000 Professional.
- WebTV for Windows updates provide support for a broader array of tuner cards and help set the standard for the combination of high-bandwidth data and video.
- DirectX API 6.1 delivers a variety of improvements to Windows multimedia technologies, including better audio and video synchronisation.
- Processor and motherboard optimisations for the latest hardware technologies, including Intel Pentium III, are featured.
- Device Bay support enables a system to ship with Device Bay hardware.
- Windows 98 Service Pack 1 addresses issues with existing Windows 98 features and includes the Windows 98 year 2000 update and Internet Explorer 4.01 Service Pack 2.

Now with Plus! 98

The ideal companion for Windows 98

Enhancements for work and play include powerful system utilities, new themes and cool games.



Microsoft Windows 98 2nd Edition U/G MIC771

\$149

PROGRAMMING LANGUAGES & OPERATING SYSTEMS

WebSearch Code: MIC771

Microsoft Encarta Reference Suite 2000



Four Multimedia Reference Works In One Essential Information Collection

Microsoft Encarta Reference Suite 2000 combines comprehensive content and advanced technology to create an engaging educational experience on your PC in this award-winning multimedia reference suite.

Features & Benefits:

The #1 name in multimedia encyclopedias, Encarta Encyclopedia Deluxe 2000 has 50% more information, including 42,000+ authoritative articles, 11,000 new historical archive articles, and 40+ million words.

Experience more multimedia! Bring learning to life with more than 17,300 photos and illustrations, 170+ videos and animations, and 2,600 audio clips.

Explore the world from your desktop with Encarta Interactive World Atlas 2000. With more than 20 map styles and 1.7+ million place names, it provides eight times the detail of any printed atlas!

Also experience the new Multimedia Map which displays images, world music, flags, national anthems and more. Or explore fascinating geologic and geographic phenomena with the new Map Treks.

Enrich your command of the English language as it is written and spoken around the world with the unique Encarta World English Dictionary.

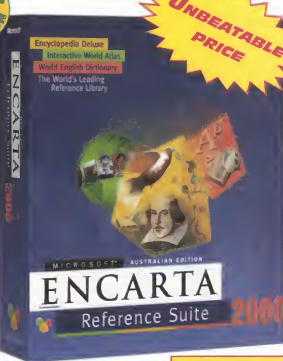
The first newly written English dictionary in 30 years-contains 400,000+ authoritative references, word histories and usage notes, including new English words and phrases.

Also includes Free! Encarta Online Deluxe! Access Encarta Encyclopedia Deluxe anytime, anywhere you have Internet access.

Make learning an ongoing adventure. All suite products work together to inspire a passion to learn, explore, discover and create.

Online updates for Encarta Reference Suite 2000 are made available on the Internet each month from June 1999 to December 2000 at no additional cost. Access to and use of the Internet may require payment of a separate fee to an Internet service provider. Connect time charges may apply.

*After Microsoft cashback offer. Call for details.



MSS258

ONLY

\$79**

WebSearch Code: MSS258

www.iswh.com.



CUSTOMISE YOUR OWN PC ON OUR WEBSITE

Why waste your hard earned money buying what everyone else wants you to buy? Use our web. tailor a PC to YOUR needs and YOUR budget. It's quick, it's easy, and best of all, YOU get the great that YOU want.

Choose the Configuration you want



Calculate the Price

**Order Online**

WHAT YOU GET

- *The latest specifications*
- *Great prices*
- *Fantastic value*
- *YOUR PC*
- *The ability to add printers, scanners, software and anything else you need to your order*

WHAT YOU WON'T GET

- Pushy sales people selling last months model
- Overpriced PCs

ADD ANYTHING FROM THIS CATALOGUE AND MORE TO YOUR ORDER!



NEED MORE THAN ONE PC? USE OUR WEBSITE OR CALL OUR SALES TEAM FOR INFORMATION ON SOFTWARE LICENSING - THE BEST WAY TO SAVE MONEY ON SOFTWARE PURCHASES WITH YOUR PC.

www.iswh.com.au/custompc

Cut out or photocopy and send to: International Software Warehouse Pty., 13 Bradford Estate, 10 Bradford Street, Alexandria, Sydney, NSW 2015

Qty	Reference	Description	Price
1	FREE GIFT!	Don't forget to ask!	FREE

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

Please charge my VISA / MasterCard / AMEX / Bank Card

Remember! free gifts are not sent unless requested.

Exp. Date □ □ / □ □ / □ □

Delivery TOTAL

Please charge my ☐ VISA / ☐ MasterCard / ☐ AMEX / ☐ Bank Card

Please indicate where you heard about us...

Remember! free gifts are not sent unless requested

☐ APC ☐ PC @uthority ☐ PC Buyer ☐

Classification	Name
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

Signature

Tel No. (Daytime Only)

Address

Postcode

State

To Order:

- 24 hour Express Fax on 02 9700 8801
- or
- Call us on 1300 300 003
- or
- Visit our Website at www.iswh.com

Freight Charges

- Under 3kgs overnight (Sydney Metro) **\$6.95**
- Under 3kgs 2-3 days (All capital cities) **\$9.95**
- Under 3kgs 2-3 days (Rural and country) **\$Call**
- Over 3kgs call for competitive price **\$Call**
- Sydney Same Day Express **\$Call**



No Frills

Just fast, reliable,
affordable computer
support & service-
nationally.

Call AVO for further information on
just how affordable and easy it is to
keep your network running. No jobs
too small! So don't hesitate, call

**AVO Computa-Care on
(02) 9906 2655 today.**

AVO Electronic Systems Pty Ltd

29 Dickson Avenue
Artarmon NSW 2064

Tel: (02) 9906 2655 Fax: (02) 9906 2735



AVO Computers Pty Ltd

72 Walker Street
North Sydney NSW 2060

Tel: (02) 9959 3328 Fax: (02) 9959 3373

SINCE 1987

Buy DIRECT from an established supplier.

PROCESSOR:

- Intel Celeron 433A (370)
- Intel Celeron 466A (370)
- Intel Celeron 500A (370)
- Intel Pentium III-450 (Slot 1)
- Intel Pentium III-500 (Slot 1)
- Intel Pentium III-550 (Slot 1)
- Intel Pentium III-600 (Slot 1)
- AMD K6-2 400 (s-7)
- AMD K6-2 450 (s-7)
- AMD K6-3 400 (s-7)
- AMD K6-3 450 (s-7)
- AMD Athlon K7 500 (Slot A)
- AMD Athlon K7 550 (Slot A)
- AMD Athlon K7 600 (Slot A)
- AMD Athlon K7 650 (Slot A)

MOTHERBOARDS

- Abit BH6
- Abit BE6, UI66
- Abit BX6, UI66 (Dual 370)
- Aspen A539 Pro, 1Mb (x7)
- Aspen A56BC
- ASUS P54 512K (x7)
- ASUS P38T
- ASUS P28D (Dual)
- ASUS P28DS (Dual-U2W)
- Epos 58NVP3C2 - AT (x7)
- Epos 51MVP3G - ATX (x7)
- Kit 4MB (separate)
- FIC VCA-3034, 1Mb (x7)
- FIC SD, 501A, 500K (Slot A)
- Gigabyte 5AA, AX (x7)
- Gigabyte 68XD (Dual)
- Gigabyte 68XS (UW)
- Gigabyte 68XD2 (Dual-UW)
- Leadtek 167 (Slot A)
- PCCHIP 8M1 (BM,3D,100.56)
- SuperMicro P65BA
- SuperMicro PADBE (Dual)
- TECHART
- 16MB EDO SIMM 72 pin
- 32MB EDO SIMM 72 pin
- 32MB SDRAM PC100
- 64MB SDRAM PC100
- 128MB SDRAM PC100

Call for the most updated pricing!
Memory for Brand Name Notebook &

Desktop, call 1300 368 922

HARD DISKS - IDE

- 6.4Gb Seagate Medalist
- 8.6Gb Seagate Medalist
- 10.2Gb Seagate Medalist
- 13.6Gb Seagate Medalist
- 17.0Gb Seagate Medalist
- 20.0Gb Seagate Barracuda
- 28.5Gb Seagate Barracuda
- 9.1Gb IBM Deskstar 7200
- 13.5Gb IBM Deskstar 7200
- 18.0Gb IBM Deskstar 7200
- 22.0Gb IBM Deskstar 7200
- 25.0Gb IBM 7200 8.5m
- 27.3Gb IBM 7200 8.5m
- 34.2Gb IBM 7200 8.5m
- 6.4Gb Quantum CX
- 10.2Gb Quantum CX
- 13.0Gb Quantum CX
- 20.4Gb Quantum CX
- 9.1Gb Quantum KA 7200
- 13.6Gb Quantum KA 7200
- 18.2Gb Quantum KA 7200

8.4GB WD Caviar
8.5GB WD Caviar

10.1Gb WD Caviar
 13.0Gb WD Caviar
 20.4Gb WD Caviar
 9.0Gb WD Caviar 7200
 18.0Gb WD Caviar 7200
 Promise U-66 (eem) + cable
 4.8Gb Fujitsu (Notebook)
 6.4Gb Fujitsu (Notebook)
HARD DISKS - SCSI
 1.1Gb IBM Ultrastar 18E5
 18.3Gb IBM Ultrastar 18E5
 1.1Gb IBM Ultrastar 9LZX
 18.2Gb IBM Ultrastar 18ZX
 9.1Gb Quantum Atlas IV
 18.2Gb Quantum Atlas IV
 9.1Gb Quantum Atlas IV
 18.2Gb Quantum Atlas 10k
 4.5Gb Seagate Medialix Pro
 9.1Gb Seagate Barracuda
 4.5Gb Seagate Barracuda
 18Gb Seagate Barracuda
 4.5Gb Seagate Chetnah
 9Gb Seagate Chetnah











IBGb Seagate Cheetah

STORAGE DEVICES
LSI20 Int. IDE (oem)
100M Zip Int. IDE (oem)
100M Zip Ext. P/SCSI
100M Zip Ext. USB

NOTEBOOK SPECIALS

\$296	Toshiba Satellite 2540CDS
\$330	Toshiba Satellite 2590CDS
\$467	Toshiba Satellite 2590CXT
\$376	Toshiba Satellite 4060CXT
\$122	Toshiba Satellite 4090CXT
\$146	Toshiba Satellite 4100XVD
\$439	Toshiba Portege 3110CT
\$320	Compaq Armada M300 A333
\$1,071	Compaq Armada M300 C333
\$1,322	Compaq Armada 7400 6333
	Compaq Armada 3500 6333
\$186	Compaq Armada 1750 A366
\$241	Compaq Armada 1750 A366
\$261	Compaq Armada 1500C C466
\$159	Compaq Armada 1500C C366
\$165	IBM TP 1 C366/32M/4.8G/5.12.1T/W
\$135	IBM TP 390E C366/32M/4.8.12.1/W
\$187	IBM TP 390E PI300/32.3/213/W
\$182	IBM TP 390E PI333/64M/4.1/W
\$145	IBM TP 500E PI366/64M/6.3.3/W/98/56
\$159	IBM TP 670E PI333/64M/4.1/3/98
\$131	Acer 317E PI333/64M/4.12.1T/56/98
\$290	Acer 317E PI333/64M/4.13.3T/56/98
\$330	Acer 317E PI333/64M/4.12.1T/56/98
\$417	Pioneer C400, 4.8G, 32M, 12.1D, 24x
\$379	Pioneer C433, 4.8G, 32M, 12.1D, 24x
\$348	Pioneer C466, 4.8G, 32M, 12.1D, 24x
\$119	Pioneer C400, 6.5G, 32M, 12.1T, 48x
\$186	Pioneer C433, 6.5G, 32M, 12.1T, 48x
	Pioneer C466, 6.5G, 32M, 12.1T, 48x
\$155	Pioneer C466, 6.5G, 32M, 12.1T, 48x
\$105	Pioneer PI336, 6.5G, 64M, 14.1T, 2x, D
\$174	Pioneer PI336, 6.5G, 64M, 14.1T, 2x, D



	\$2,288	HP Deskjet 830C	\$379
	\$2,938	HP Deskjet 3700C	\$470
	\$3,568	HP Officejet 635C 4 in 1	\$751
	\$4,223	HP Officejet 745 4 in 1	\$946
	\$4,303	HP Officejet 745 4 in 1	\$1,110
	\$5,667	HP Laserjet 2100	\$1,357
	\$4,564	HP Laserjet 5000 A3	\$2,897
	\$4,524	Kyocera FS5800 4M PCL5e	\$586
	\$3,662	Kyocera FS5900C Colour 40M	\$4,324
	\$4,890	Panasonic KX-P6100 PCL5e	\$3,322
	\$4,524	Acer 320P EPP	\$1,120
	\$4,071	Acer 620S SCSI	\$1,601
	\$3,707	Agfa Snapscan 1212U USB	\$283
	\$2,654	Canon CanoScan F60 USB	\$152
	\$2,441	Epson Perfection 610 USB	\$223
	\$2,827	Epson Perfection 1200 USB	\$445
	\$3,472	HP Scanjet 3200C EPP	\$187
	\$3,958	HP Scanjet 3300C USB	\$297
	\$5,719	HP Scanjet 4200C USB	\$471
	\$6,410	HP Scanjet 5200C EPP/USB	\$385
	\$5,359	Microtek X6 A4 USB	\$1,070
	\$2,919	56K V90 Modem & Fax Int. PCI	\$108
	\$3,925	56K V90 Modem & Fax Ext. PCI	\$113
	\$4,345	Bankvue V90SP 56K Ext. USB	\$196
	\$2,160	Netcomm Roadster II 56K USB	\$129
	\$2,186	3Com USB Sportster Ext. USB	\$268
	\$2,228	Dynamik PCMCIA 56K Global	\$158
	\$2,642	D-link PCMCIA 10/100 650TX	\$193
	\$2,668	Netcomm Ext. Net 10 - 56K	\$264
	\$2,711	Xircor RealPort Value 56K	\$241
	\$4,072	Xircor RealPort Ethernet 10/100	\$281
	\$4,193	Xircor RealPort 10 - 56	\$557
		Xircor CreditCard 10 + 56	\$577
		3Com 3C100T-40 Ethernet & 10/100	\$158

\$193	250M Zip int. IDE (oem)
\$205	250M Zip Ext. PISCSI
\$211	2.2G ORB Int. IDE
\$231	2.2G ORB Ext. Parallel
\$251	2.2G ORB Ext. Parallel
\$278	VIDEO & GAMES CARDS
\$381	4M Eagle 53 AGP
\$495	8M Eagle 53 AGP
\$264	32M Asustek TNT2/TV
\$387	32M Asustek TNT2/TV Ultra
\$309	16MATI Xpert 2000
\$486	32MATI Rage Fury/TV
\$378	32M Creative TNT2 Ultra/TV
\$378	32M Diamond V770
\$688	32M Diamond V770
\$196	32M Diamond V770 Ultra
\$232	32M Leadtek TNT2/TV
\$252	16M Millennium G400 Dual
\$411	32M Millennium G400 Dual
\$243	32M Millennium G400 MAX
\$282	16M Voodoo 3 2000 AGP
\$409	16M Voodoo 3 2000 PCI

MONITOR:

\$266	Mitsubishi DView 1554i
\$299	Mitsubishi DView 1770ie
\$476	Mitsubishi DView 1772ie
\$315	Mitsubishi DView 1795DT
\$514	Mitsubishi DView 1995
\$80	Mitsubishi DView 2107
\$295	Acu 54E
\$379	Acu 77C
	CTX PR711 (Trinitron)
\$583	Hitachi CM650 22
\$242	Hitachi CM75 22
\$840	Hitachi CM76 22
\$1,435	Hitachi CM813 22
\$555	NEC MultiSync V500
\$965	NEC MultiSync V700
\$794	Panasonic E70i
\$254	Panasonic E70i
\$376	SONY E100 (Flat Trinitron)
\$579	SONY E200 (Flat Trinitron)
\$608	SONY G400 (Flat Trinitron)
\$624	SONY G500 (Flat Trinitron)
\$1,119	Viewmaster M173NF 25
\$1,119	Viewmaster P57S (4 USB)
\$944	Viewsonic G790

LCD MONITORS

\$147	Acer FP551 IS
\$133	Hitachi CML150XE IS
\$199	Mitsubishi DV150 IS
\$250	Mitsubishi RDT1B0S 10
	NEC LCD1235V IS

Panasonic LC505 15
 SONY CPDL133 13.3
 SONY CPDM151 15.1
 Viewsonic VG150 15
CD ROM & DVD & CDR
 44x IDE ATAPI
 48x Aopen IDE
 50x ASUS/STK IDE
 40x Plextor SCSI (20MB/s)
 Creative 6x DVD DMR3 (Kit)
 Pioneer 6x DVD
 Pioneer 6x DVD & MPEG2
 Pioneer 10x DVD
 Sony 6x DVD
 Hitachi 5.2G DVD RAM SCSI
 Panasonic (4x8) IDE
 Panasonic (8x20)
 Plextor (8x20) 8208i
 Teac (4Wx24R)
 Teac (6Wx24R)
 Teac (8Wx24R)
 HP (4x4x24) 8200i

Ricoh (6X4X20) 7060A IDE
Ricoh (6X4X20) 7060S

Sony 40X4X24 120E IDE
Sony 65X4X16
SB Vibras CDS & SPEAKERS
SB Vibras 128 (oem)
SB Live (oem)
SB Live + PCWORKS
SB Live Digital + FPS2000
Diamond Monitors MX300
Xitel Storm Platform (oem)
Logitech LaserNavigator X2
Altac Lansing AC548
Cambridge PC Works
Cambridge FPS1000
Logitech SoundMan X1
Logitech SoundMan X2
Yamaha YST7/MS28

PRINTERS
Canon BJ-C2650
Canon BJ-C2000SP 5ppm
Canon BJ-C-4650 3.5" (Scan)
Canon BJ-C-5000 (A3)
Canon BJ-C-6000 8ppm
Canon BJ-C-7100
Epson Stylus Color 460
Epson Stylus Color 660
Epson Stylus Color 760
Epson Stylus Color 900
Epson Stylus Photo 700
Epson Stylus Photo 1200 (A3)

Kodak DC-215

\$21.24	Kodak DC-215 USB	\$924
\$1,899	Kodak DC-2150	\$1,133
\$27.13	Sony Digital Mavica FD73	\$1,057
\$22.99	Sony Digital Mavica F2H3	\$1,531
	Diamond Rio 3000, 3204	\$1,530
	Diamond Rio 500, 620	\$1,530
\$75	TV TUNERS & VIDEO CONF.	
\$139	Dynalink TV Tuner + Radio	\$129
\$283	Kodak DVC-323 USB	\$243
\$63	Logitech QC Express	\$163
\$63	Logitech QC Home USB	\$163
\$156	Logitech QC Pro P/USB	\$232
\$199	Logitech QC VC P/USB	\$146
	Iomega Zip	\$323
\$393	Pinnacle Studio DC10+	\$633
\$352	Pinnacle Studio PC10+	\$632
\$63	Miro Video DC10+	\$1,227
\$378	Miro Video DV3000	\$1,307
\$619	Miro Video DV2000	\$1,046
\$44	SECI C.A.R.D.S.	
\$577	Adaptec 2903 PCI (em)	\$190
\$556	Adaptec 2930 UI (pci)	\$126

\$447	Adaptec 2940 U2W PCI (Kit)
\$450	Tekram 390U PCI (Kit)

\$469	Network 390U24 PCI (Kit)	\$449
TELECOM ADAPTERS & HUBS		
\$60	Link DFE-503T 10/100M	\$51
\$119	NewGear 10/100M	\$69
\$63	Comstar Ethernet 10/100M	\$69
\$623	Intel EPPRO 10/100M	\$111
\$123	Action Bp 10/100M (oem)	\$94
\$111	Link 16-p 10/100M (Soho)	\$104
\$174	Link 5-p 10/100M Hub (oem)	\$172
\$174	D-Link S-5 10/100M (Soho)	\$180
\$111	Link 8-p 10/100M (Soho)	\$111
\$126	D-Link 17-p 10/100M (Soho)	\$180
\$129	D-Link 8-p 10/100M Hub (Soho)	\$121
\$123	Link 16-p 10/100M (Soho)	\$111
\$163	Intel InBusNet Bp 100M Hub	\$148
\$163	Intel InBusNet Bp 100M Hub	\$148
\$117	Intel InBusNet Bp 10/100 Autosensing	\$135
\$117	Intel InBusNet Bp 10/100 Autosensing	\$135
\$170	Negamer 6/ 10/100 Dual Speed Hub/ Xtr	\$136
\$147	3Com Office Connect 10/100M (u/mng)	\$130
\$458	3Com Office Connect 10/100M (u/mng)	\$232
POWER PROTECTION (UPS)		
\$500	APC Backup Pro 240	\$300
\$429	APC Backup Pro 420	\$257
\$429	APC Backup Pro 420	\$257
\$496	APC Smart-UPS 250	\$467
\$496	APC Smart-UPS 250	\$467
\$886	Libert ProActive 470VA UPS	\$393
\$886	Libert ProActive 470VA UPS	\$407

forté

SINCE 1987

Deluxe Series

Forté Conqueror Series

CPU	Genuine AMD Athlon K7 Processor
M/Board	FIC SD II VIA686 Chipset
Memory	128Mb SDRAM PC100
Hard drive	9.1Gig ULTRA-66 EIDE Hard Drive 7200rpm
Floppy	1.44M, 3.5" Floppy Disk Drive
Video card	32Mb Diamond Viper V770 TNT2 Ultra
Monitor	17" Mitsubishi 1770Ie
Casing	ATX Midi Tower Casing 250W Power Supply
Keyboard	Logitech Internet PS/2 Keyboard
Mouse	Logitech Wheel Mouse PS/2
DVD	Pioneer 6x DVD 32x EIDE CDROM Drive
Sound card	Xitel Storm Platinum PCI with Headphones
Speakers	600W Stereo Speakers with Subwoofer
Network	10/100Mbps Fast Ethernet LAN on board
Modem	56K V90 Internal Fax/Modem
Software	Windows 98 in CD fully Installed & Configured

Price	\$ 2820	K7-500
	\$ 3020	K7-550
	\$ 3340	K7-600
	\$ 3660	K7-650

Forté Explorer Series

- Genuine Intel Processor
- CP Chips M748L/MRTPC Motherboard ATX
- Premium Grade 64Mb SDRAM PC100
- 6.4Gig ULTRA ATA EIDE Hard Disk Drive
- 1.44M, 3.5" Floppy Disk Drive
- 8Mb 64-bit On-Board Video Card
- 15" Mitsubishi 1554i (3 Year On-site Warranty)
- ATX Midi Tower Casing 250W Power Supply
- 104 Key Windows PS/2 Keyboard
- Logitech PS/2 Mouse
- 44X EIDE CD ROM Drive
- 16-bit 3D Sound On-Board
- 180W PMPO Stereo Speakers
- 56K V90 Integrated Modem
- 10/100 Integrated Network Card

PRICE	\$ 1140	Cel-433
	\$ 1180	Cel-466
	\$ 1350	PIII-450
	\$ 1460	PIII-500

Forté Pioneer Series

- Genuine Intel CPU + AOpen Motherboard
- QR Genuine AMD CPU + Epox Motherboard
- Premium Grade 64Mb SDRAM PC100
- 8.4 Gig ULTRA ATA EIDE Hard Disk Drive
- 1.44M, 3.5" Floppy Disk Drive
- 8Mb Trio 32/2X AGP Video Card
- 15" Mitsubishi 1554 (3 Year On-site Warranty)
- ATX Midi Tower Casing 250W Power Supply
- 104 Key Windows PS/2 Keyboard
- Logitech 3 Button Mouse
- 44X EIDE CD ROM Drive
- 480W Creative Vibra 128 Sound Card
- 480W PMPO Stereo Speakers
- 56K V90 Internal PCI Voice/Fax/Data Modem
- Windows 98 on CD fully Installed & Configured

PRICE	\$ 1690	PIII-450	\$ 1380	K6/2-400
	\$ 1800	PIII-500	\$ 1410	K6/2-450
	\$ 2010	PIII-550	\$ 1500	K6/3-400
	\$ 2240	PIII-600	\$ 1600	K6/3-450

Forté Odyssey Series

- Genuine Intel Pentium III Processors
- AOpen AX6BC M'board, Intel 440BX Chipset
- Premium Grade 128Mb SDRAM PC100
- 13 Gig ULTRA ATA EIDE Hard Disk Drive
- 1.44M, 3.5" Floppy Disk Drive
- 32Mb Diamond Viper V770 TNT2
- 17" Mitsubishi 1770Ie (3 Year On-site Warranty)
- ATX Midi Tower Casing 250W Power Supply
- Honeywell Spacemate II PS/2 Keyboard
- Microsoft Intellimouse PS/2
- Pioneer 6x DVD 32x CD-ROM Drive
- Genuine Creative Vibra 128 Sound Card
- 600W PMPO Sub-Woofer Luxury Stereo
- 56K V90 Internal PCI Voice/Fax/Data Modem
- Windows 98 on CD fully Installed & Configured

PRICE	\$ 2400	PIII-450
	\$ 2520	PIII-500
	\$ 2730	PIII-550
	\$ 2950	PIII-600

We also sell brand name computers such as IBM, Compaq, Hewlett Packard, Acer, and much much more.
For personal configurations, visit our website and select the Computer Builder.

* Terms & Conditions All prices include sales tax (including tax also available upon request) and are subject to our full terms and conditions of sale, a copy of which is available on request or in our website. Prices can change without notice, for updated pricing please call or visit our website. * Ordering & Payment: Ordering can be done by telephone, fax, email or by direct from our secure website. We accept Cash, Direct Deposit & Bank Cheque. Credit card & Eftpos may attract surcharge (for system mainly). All cheques and direct deposits need 3 working days clearance. (Monetary Australia Bank, Scenicfield, BSB 282515, Account No. 45519 3041). * Delivery: Under 1 kg Australia Wide \$10, OVER \$100 up to 20kg \$20.00. Other areas or interstate please contact us. * Warranty & Returns: All goods sold carry manufacturer's warranty, either back to base or direct to the manufacturer. Forté system sales carry 7 year parts & labour warranty back to base. We can't always guarantee compatibility, it is the customer's obligation to ensure that the correct goods are ordered. Before returning goods, you must obtain an RMA form or by phoning our support line. The returned goods must be wrapped and well packaged for return within 7 days of receipt and must be accompanied by a copy of your invoice. A refund will be given minus 20% re-claiming fee. All delivery and insurance cost must be borne by the customer. * Pictures above are for illustrative only. * Trademarks & logos are the property of the respective owners. E & OE *

ORDERLINE 1300 368 922 (local call)

or PHONE (02) 9715 2911 • FACSIMILE (02) 9715 2922 • SERVICE (02) 9715 7399

WEB SITE www.fortecomputers.com.au • EMAIL sales@fortecomputers.com.au

ADDRESS Level 1, 101-105 Parramatta Rd, Concord, NSW 2137

OPENING HOURS Monday to Friday 9.00am-6.00pm; Saturday & Sunday 10.00am-3.00pm

BRANCH R6, 320 Pitt St, Sydney, NSW 2000. PHONE (02) 9267 9494 (Monday to Saturday only).

PC Supermarket

For advertising details contact

Justin Cain on (02) 9288 9157

PRODUCTS AND SERVICES FOR DIRECT PURCHASE

BRAND NEW!



Introducing
the Stylish
E-Net
and
Explorer
Computer
Systems...

Perfect
for your
Business.



E-Net
SYSTEMS

Intel® Celeron® 466 Mhz CPU

with 128 K Pipeline Cache
8.4 GB (very fast) Hard Disk Drive
64 MB (PC 100) SDRAM
15" XGA (1280) High Resolution Monitor
8X-48X CD-ROM 2x Drive, 1x DVD, 1x USB
USB Port, ATX Form Motherboard
1.44 MB Floppy Disk Drive
4 MB VGA Card with 3D Accelerator AGP-4
High Speed 40 x CD-ROM
PCI 33 Sound with 120W PMPO Speakers
56K Fax/Modem
100 Enhanced Keyboard P/S-2 Type and P/S-1 Mouse
High Mid Tower with 250W Power Supply ATX Form
Windows 95 SE Version Operating System
Lotus SmartSuite Millennium
Norton Antivirus
2 Years Parts and Labour Warranty



NOW ONLY
\$1499

Explorer
SERIES COMPUTERS

Intel® Pentium® III 500 Mhz CPU

with 512 K Pipeline Cache
13.5 GB (very fast) Hard Disk Drive
64 MB (PC 100) SDRAM
17" XGA (1280) High Resolution Monitor
Intel® 80386 Chipset & System, 2x PCI, 1x USB
Dual USB Port, ATX Form Motherboard
1.44 MB Floppy Disk Drive
NVIDIA RIVA TNT (4 MB SGRAM AGP-4)
High Speed 50 x CD-ROM
Creative Sound Blaster Audio 3D with 40W PMPO Speakers
56K Fax/Modem
100 Enhanced Keyboard P/S-2 Type and P/S-1 Mouse
High Mid Tower with 250W Power Supply ATX Form
Windows 95 SE Version Operating System
Lotus SmartSuite Millennium
Norton Antivirus
2 Years Parts and Labour Warranty

NOW ONLY
\$2299

STYLISH & INNOVATIVE

THE NEXT GENERATION HIGHLANDER SERIES NOTEBOOK shatters the speed barrier



intel
inside
celeron®
466
Mhz
with MMX™
Technology

FREE 56K PCMCIA MODEM
VALUED AT \$199 AVAILABLE WHILE STOCKS LAST

HIGHLANDER
HL-53C746

Intel® Celeron® 466 Mhz CPU

128K Pipeline Burst Level 2 Cache
High Performance 8.4 GB Hard Disk
4x Speed Internal CD Rom
Windows 95 SE Version
Internal 1.44 Floppy Disk Drive
12.1" Active Matrix TFT Screen with 55 Virga 64 Bit AGP
4MB SGRAM with Dual-Vega CRT, LCD and TV out
54MB Superfast SDRAM (upgradable to 512MB SDRAM)
330mm (width) x 240mm (depth) x 35.5mm (height)
USB Connectivity, Long Life Lithium Ion Battery
Super Lightweight (2.8kg)
Smart Executive Carry Case



NOW ONLY
\$2999

HIGHLANDER
HL-53C746B-G

Intel® Celeron® 466 Mhz CPU

128K Pipeline Burst Level 2 Cache
High Performance 8.4 GB Hard Disk
4x Speed Internal DVD Rom
Windows 95 SE Version
Internal 128MB LS-120 Floppy Drive
14.1" Active Matrix TFT Screen with ATX Rego Pna with 64 Bit
AGP-4x 2MB SGRAM with 16-Meg CRT, CD and TV out
64MB Superfast SDRAM (upgradable to 512MB SDRAM)
310mm (width) x 250mm (depth) x 35.5mm (height)
USB Connectivity, Long Life Lithium Ion Battery
Super Lightweight (2.5kg)
Smart Executive Carry Case

LS-120 DRIVE **DVD ROM**

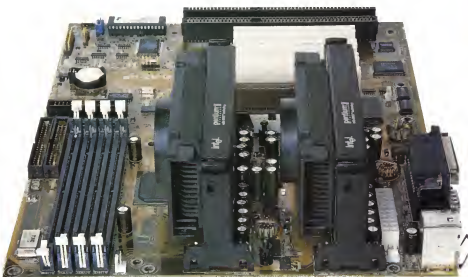
NOW ONLY
\$4299

STYLISH & INNOVATIVE

PROUDLY DISTRIBUTED BY
PC Club
AUSTRALIA

PLEASE CALL NOW (02) 9736 2688

Even Higher Performance!



Dual 600MHz Pentium III NT Workstation

- 2x600MHz Pentium III CPU
- Asus P2B-DS Motherboard
- Adaptec Ultra2 SCSI on-board
- 256Mb 100MHz Cert SDRAM
- Quantum 13Gb Fireball CR
- Diamond Viper 770 16Mb AGP
- Sony 32x CD ROM Drive
- Sony 1.44 Floppy Drive
- Soundblaster PCI128
- Macase Full Tower Case
- Sony 200GS17" Monitor
- Windows NT Workstation
- Keytronic kbd, MS IntelliMouse

\$6,620



500Gb Drive Array!

The Seagate 50Gb Barracudas are here! We are now shipping 150Gb-1Tb Ultra-2 SCSI Drive arrays based on these drives, offering RAID level 0-5. Single or multi-channel SCSI interface or 100base-T interface options are available.

Rackmount or stand-alone tower configurations are available.

Pricing for a 200Gb array starts at \$9,990 ex tax.



Sigmacon has been appointed a dealer for Matrix Digisuite - the ultimate Real-time video editing system. Digisuite offers up to lossless video quality, balanced audio and over 100 2D real-time effects. Available with either Premiere 5 RealTime or Speed Razor 4RT. Call for a demo.



DVRaptor is the next generation Firewire editing solution for your DV camera. It features excellent video inlay, batch capture and playback from Premiere 5's timeline.

Check out our new online ordering service at www.sigma.com.au



The DVRex-M1 offers hardware DV-analogue-DV conversion, Digital Audio IO and all the features of the DVRaptor. The ultimate DV solution!



SIGMACOM PTY LTD

Unit 35,
65 Captain Cook Drive
Caringbah NSW 2229
www.sigma.com.au

ACN 065 279 101
Tel (02) 9524 9846
Fax (02) 9540 4554

The Quickest & Easiest

CHECK 2000 PC Deluxe

Gives you more - test all five 'at-risk' layers of your PC.

Includes BIOS Fuser, detailed advice on thousands of software programs, Data Scanner to hunt down date-dependent data and FREE Y2K video. Also available
CHECK 2000 Client Server \$399
(Includes 5 licenses).

\$85

RRP\$99

SPECIAL



Encyclopaedia Britannica 2000 Deluxe

Knowledge for the information age.

Contains the entire text of the 32-volume Encyclopaedia Britannica. Over 73,000 thought-provoking articles and brilliant interactive multimedia and 8,500 photos and illustrations.
(Win98/95/NT) Standard version also available for \$95 RRP\$99 (Win3.1/Mac).

\$159

RRP\$199

NEW VERSION!



Microsoft Encarta 2000

The world's best-selling multimedia encyclopedia.

Explore a wealth of in-depth information with more than 30,000 authoritative articles on major subjects. Learn more through spectacular multimedia
- videos, animations, audio clips, and Interactivities.

\$39*

RRP\$89.95

AFTER \$49 CASHBACK



PC Anywhere 9.0

The leader in remote access & file transfer

PC Anywhere keeps you productive wherever you are by letting you connect to your office PC to retrieve files or run desktop applications. And it's a great support tool for IT staff. Upgrade also available
\$159 (RRP\$179)
(Windows 98/95/NT/3.1/DOS)

\$195

RRP\$269

SPECIAL



AutoCAD LT 2000

Over 200 new features & enhancements!

This release is easier to use and more productivity packed than ever. New features include: * Visual & Intuitive Tools
* Open multiple drawings within a single session. * 100% AutoCAD 2000 drawing compatible. * HTML-based online learning PLUS MUCH, MUCH MORE!
Full Version \$425 (RRP\$995)

\$279

UPGRADE

NEW



Adaptec Easy CD Creator 4.0 Deluxe

Create music, photo & backup CDs.

Access music on the Web and fine-tune music tracks. Edit and enhance photos and videos. Backup & share data with confidence. A new animated character takes you through the steps of creating your CDs.

\$119

RRP\$135

NEW



Academic Macromedia Dream Team

The premier toolset for creating interactive Web sites.

Save \$600!! Includes Dreamweaver 2.0, Fireworks 2.0, Flash 4.0 (NEW!) and a BONUS copy of Freehand 8.0. Create and publish graphics, illustrations, and layouts for Web and print design.

\$379

VALUE \$1,012

SPECIAL



Adobe InDesign

Page-layout & design for the future of professional publishing.

Delivering a level of Adobe integration, productivity and precision that no other page layout program can touch. Upgrade from QuarkPress, Photoshop, Illustrator or PageMaker. Full version available:
\$1,129 RRP\$1,495.

\$465

RRP \$495 (CROSSGRADE)

NEW



Product Description

	Inc Tax
ABC Flowcharter 7.0 (Limited Stock)	195
ACT! 2000 5.0 - NEW!	159
Adaptec Toast CD Recording 4.0 (Mac) - NEW!	125
Adobe Acrobat 4.0	395
Adobe Framemaker 5.5.6	1,149
Adobe GoLive 4.0	469
Adobe Illustrator 8.0	675
Adobe InDesign 1.0	1,129
Adobe PageMaker 6.5 PLUS	759
Adobe Photoshop 5.5 (includes ImageReady 2.0)	1,059
Adobe Publishing Collection	1,739
Adobe Type Manager 4.0 Deluxe NT	125
Adobe Web Collection	1,749
Allaire Homesite 4.0	159
Arcserve IT 6.61 Advanced Edition	1,740
Arcserve IT 6.61 NT Single Server	849
Autodesk Acropolis Business	169
Autodesk Sketch 6.0 for Windows	169
Backup Exec 3.0 (Windows 98)	145
Backup Exec 7.3 NT Multi Server Upgrade	799
Backup Exec 7.3 NT Single Server	869
Borland C++ Builder 4.0 Pro Upgrade	389
Borland Delphi Professional 5.0 Upgrade	355
Cold Fusion 4.0 Enterprise For Server	5,375
Conversions Plus 4.6	250
Coral Draw 9.0 (Version 4.0 with 9.0 Upgrade)	475
Coral Draw 9.0 Upgrade	399
Coral Gallery Magic 1,000,000	159
Coral Paradox 9.0 Upgrade	195
Coral WordPerfect Office 2000 Upgrade	199
Coral WordPerfect Office 2000 Voice Upgrade	249
Crystal Reports PRO 7.0	579
Diskeeper Workstation 5.0 - 1 PC	579
Dragon Dictate Naturally Speaking Preferred 4.0	289
Dragon Dictate Naturally Speaking Standard 4.0	169
Dragon Essentials 4.0	89
End Note Plus 3.0 for Windows	419
Eudora Pro 4.0	59
Family Tree Maker 6.0 (8 CD)	95
Filemaker Pro 4.1	346
Fix-it! Utilities 99	85
IBM ViaVoice 98 Executive (Limited Stock)	175
iGrafx Professional (New Flowcharter)	545
Installshield 2.0 Express	389
iShare 3.5 - 10 User Sessions	259
Kali's Power Tools 5.0	275
LapLink for Windows 95/98/NT	169
Linux Complete 6.0	49
Macromedia Director Shockwave 7.0 Studio	1,699
Macromedia Dreamteam	899
Macromedia Dreamweaver 2.0	495
Macromedia Flash 4.0	525
MAUS MasterPlan PRO	165
MAUS Stockmarket Plus 3.0	165
McAfee Office 2000 - NEW!	95
MetaCreations Canoma 1.0	825
MetaCreations Office Advantage (After Cashback)	99
MetaCreations Poster 4.0 Upgrade	225
MetaCreations Ray Dream Studio 5.5	549
MS Access 2000 Crossgrade/ Upgrade	155
MS Backoffice SBS 4.5 C/Upgrade & 5 Clients	1,490
MS Encarta Reference Suite (Plus \$100 Cashback)	85
MS Exchange 5.5 Server Upgrade	545
MS FrontPage 2000	169
MS Money 99 CD	47
MS MSDN Universal 6.0	3,649
MS Office 2000 Developer Crossgrade/Upgrade	889

1 Don't see it? Visit our home page for listings updated daily: www.citysoftware.com.au [email:sales@citysoftware.com.au]

FREE freight for all orders over \$200*.

*Otherwise add \$10 for delivery (SS for Melbourne metro). Additional charges may apply for orders over \$1k. Same day delivery for Melbourne metro (order before 12:30pm) - delivery before open by approved carriers. For urgent delivery, point-to-point courier recommended - guaranteed 3 hour delivery to Melbourne metro. Government / corporate purchases often and credit cards welcome (No Cash). Reseller prices available. Further discounts on quantity orders. Catalogue available on request. Only official Australian version lists. Please take this advertisement to receive offers / discounted pricing - only applicable at time of ordering. Every effort made to ensure stock availability at time of publication. Prices, features and availability subject to change without notice. City Software reserves the right to correct any errors or omissions. E & O E.



Australian Owned Company...
Why not buy Australian!

way to buy Software!

Microsoft Office 2000

NEW

What Productivity Means Today

Microsoft Office offers four unique sets of productivity tools to meet your business needs.



Microsoft Office 2000 extends desktop productivity by giving you new ways to use the Web to share information and collaborate on projects. It also provides powerful analysis tools to help you respond quickly to changing business information.

Standard Upgrade \$390

Professional Upgrade \$495

Premium Upgrade \$595

Small Business Upgrade \$395

**CALL
FOR ACADEMIC
PRICING**



Zip 250MB USB Drive

Ultra-portable drive for PC/Mac Desktops. 250MB Zip technology has the size & speed you need to handle large files & the ruggedness you demand for everyday use. This ultra-thin, high-capacity drive meets the needs of both PC and Mac users in a sleek new portable design. Also available for use with most Notebook PCs with a PCMCIA or USB port.

\$345

EX-TAX \$305



NEW

Polaroid SprintScan 4000 Digital Film Scanner

At 4,000dpi the world looks a lot sharper.

High resolution digital 35mm scanner with superior 4,000dpi & 3.4 optical density. Under one-minute scan time (54mb file), automatic film advancement, & new Polaroid PolarColor Pro Insight software. Split screen preview. Available for PC/Mac.

\$2,445

RRP \$2,995 EX \$2,099



UMAX Astra 600S

The affordable, 30-bit, colour scanner. (Win/Mac)

300x600 dpi optical resolution. Superior image quality. Windows 9x ready. SCSI interface. Legal size (8.5x14") scan area. OCR, image editing software included (e.g. Adobe Photo Deluxe). Auto colour correction by Kodak. INCLUDES SCSI CABLE

\$169

EX-TAX \$157



M5 Project 98 Upgrade	299	QuickBooks 6.0 PRO Upgrade	159	ED Norton AntiVirus 2000	59
M5 Publisher 2000	148	QuickBooks 6.0 Upgrade	89	ED Norton PC Anywhere 32 9.0 HBR	149
M5 SQL Server 7.0 CD & 5 Licences	2,169	QuickBooks 7.0 Deluxe	89	ED Norton SystemWorks 2.0	99
M5 Visual Basic 6.0 Enterprise	1,995	QuickBooks 7.0 for Business	135	ED Norton Utilities 2.0	59
M5 Visual Basic 6.0 Pro (For owners of MS Office Pro)	409	QuickBooks 7.0 Personal	69	ED Visio 5.0 Professional	329
M5 Visual C++ 6.0 Std	168	QuickBooks Super Value Pack (Limited Stock)	539	ED Winfax Pro 9.0	89
M5 Visual Studio Enterprise 6.0	2,549	QuickPayroll PRO 6.0	299	Hardware/Peripherals	
M5 Windows 98 Refresh Second Edition Upgrade	139	Sound Forge 4.5 (Includes CD Architect)	649	3Com Palm V	749 639
M5 Windows NT 4.0 Server & 5 Clt with SP 4.0	1,249	Sound Easy 4.0 Investor Pack	211	3D Subwoofer Surround Sound Speaker	75 65
M5 Windows NT 4.0 Workstation / IE 4.0	1,249	Tracker Maximizer 5.0	285	Buz Drive (From Iomega)	339 299
M5 Word 2000 Upgrade	145	VET Net Surfer	79	Canon Powershot SA ZOOM	999 862
MYOB 9.0 PLUS (Includes Payroll & Time Billing)	472	VET Premium	89	HP CD-Writer SureStore B100i Plus	569 489
MYOB 9.0 Accounting - NEW!	325	ViaGrafx MCSE NT 4.0 Certificate (Interactive CD-ROM)	579	HP Deskjet 610C Printer - NEW!	249 215
MYOB Asset Manager	245	Visio 2000 Upgrade	159	HP Deskjet 830C Printer - NEW!	369 313
MYOB Premier 2.0 (Multi-User)	869	Visio 5.0 Professional	599	HP Scanjet 3300C - NEW!	235 199
Nero Burning Rom 4.0	98	WinFax Pro 9.0	127	HP Scanjet 6300C - NEW!	949 809
Norton 2000 2.0	45	WinZip 7.0 - I User	65	Jaz Disks 2GB SCSI 3 Pack Media	559 479
Norton AntiVirus 2000	79	Academic Versions		Jaz Drive 2GB SCSI External	639 545
Norton CleanSweep 2000	65	Student/Teacher ID Required		Kodak Digital Camera DC200	749 633
Norton Ghost 5.1 Personal Edition	115	ED Adobe Acrobat 4.0	179	Netcom Roadster Ultra II 56K SVD	229 197
Norton PC Anywhere 9.0	195	ED Adobe Illustrator 8.0	265	QuickCam Pro Parallel/USB (Win 95/98 & Mac)	269 239
Norton SystemWorks 2000 - NEW!	129	ED Adobe PageMaker 6.5 PLUS	239	QuickCam V/C Parallel (Win 95/98)	169 148
Norton SystemWorks 2000 PRO - NEW!	149	ED Adobe Photoshop 5.5	469	Studio DC10+ (Miro)	595 555
Norton Utilities 2000	85	ED AutoCAD 2000 - NEW!	239	SwannSmart 56K V90 External Voice/Fax/Data	167 152
OmniPage Pro 9.0 Crossgrade/Upgrade (Soft Pack)	199	ED Borland C++ Builder 4.0 Pro	169	US Robotic 56K V90 Fax/Data Modem Ext.	189 167
OmniPage Pro Scanner Suite	315	ED Corel Draw 9.0	175	Jaz Drive 100MB Disk (3 Pack)	69 58
Paint Shop Pro 6.0 - NEW!	185	ED Corel WordPerfect 2000	89	Jaz Drive 100MB USB	245 211
Partition Magic 5.0 - NEW!	CALL	ED Filemaker Pro 4.1	285	Jaz Drive 250MB Parallel/SCSI External	299 265
Pass 2000 EXEC (Y2K Check & Fix)	89	ED Macromedia Director Studio	1029	Jaz Drive 250MB USB/PC Card External	409 362
Procomm Plus 32.4.7	225	ED Macromedia Dreamweaver	379	Jaz Drive Internal E-IDE CD-RW (4x24x4)	425 363
QuarkXPress 4.0 (Win/Mac)	2,379	ED Macromedia Dreamweaver 2.0	185	Jaz Drive Starter Kit + 4 Disks	249 219
QuickBooks 6.0	175	ED Macromedia Flash 4.0	175	ZOOM 56K Voice/Fax/Data External Modem	159 153
QuickBooks 6.0 PRO Multi User - 5 User	865	ED Microsoft Academic Titles	CALL	FULL RANGE OF TONERS & CARTRIDGES AVAILABLE	

EXPRESS ORDER LINE 1300 658 600

EXPRESS FAX ORDERS: 1300 658 010

Open: Monday to Friday: 8.30am - 6.00pm (except Wednesdays 9.00am - 6.00pm) Saturday: 10.00am - 2.00pm
Unit 103, Access Corporate Park, 45 Gilbey Road, Mt. Waverley. Postal Address: PO Box 697, Mt. Waverley, VIC 3149

FREE FREIGHT* from Victoria's largest software stock holding!

**CITY
SOFTWARE**

AUSTRALIA'S NO.1 REFILL KITS

NEW REALITY'S REFILL KITS ARE THE SMART ALTERNATIVE TO BUYING COSTLY ORIGINAL CARTRIDGES!



**SAVE 80%
AT LEAST**
AND BE PRINTING AGAIN IN NO TIME!



New Reality
Resources Pty. Ltd.



**BUY 3
GET 1
FREE**

WHY USE OUR REFILL KITS?



**WHY BUY ORIGINAL CARTRIDGES ?
WHEN YOU CAN SAVE AT LEAST 80%
ON PRINTING COSTS BY FILLING WITH
OUR EASY TO USE INKJET REFILL KITS!**

"I telephoned from Melbourne and after receiving courteous
answers to some questions and the order given late Thursday,
was amazed to receive the parcel in Friday's morning mail..."

"Please accept my compliments and best wishes for the future
New Reality Resources..."

E. Roseman
Caulfield North

"Your products, particularly cartridge refilling ink kits are being
used with great success in a variety of our printers..."

"Your prompt and effective responses to our orders are
appreciated and we wish you further success with your products..."

A. J. Carey
Barton & Roseman Pty Ltd

- 1) PRINTER WARRANTY** - Using our Refill Kits will not void your printers warranty. Printer manufacturers cannot refuse to cover a repair under warranty on the basis of using refill kits, unless they can conclusively prove that the compatible brand of supply has damaged the printer. For this reason we urge users to beware of inferior products and only use supplies that are backed by a full guarantee!
- 2) BETTER THAN ORIGINAL** - All of our inks are the best quality to be found anywhere world-wide, they produce sharp and vivid output and we believe they exceed the original manufacturers highest quality.
- 3) GET WHAT YOU PAY FOR** - Our product costs us more to produce than most, however, this assures optimal printing performance and more consistent ink properties.
- 4) DESIGNED WITH YOU IN MIND** - Our Refilling methods and equipment are always being simplified and improved with help from input and feedback from our customers.
- 5) SUPER SERVICE** - Our mission at New Reality Resources is to provide levels of customer care second to none. We offer free delivery to your door and a 100% satisfaction guarantee on all our products.
- 6) FREE ADVICE & SUPPORT** - We will help you achieve the most out of refilling and inkjet printing and even give you free independent advice when buying a new printer.

**BUY SMART
BUY DIRECT
AND SAVE**

**25% OFF CANON & EPSON
COMPATIBLE CARTRIDGES**

Yes...we also wholesale! Dealer enquiries welcome!

New Reality Resources has no affiliation with any printer manufacturers or OEM's and nor has any arrangement been made with them to form the basis for any statements we make.

FREE AUSTRALIA WIDE DELIVERY! SAME DAY DISPATCH!!
COD * MONEY ORDER * CHEQUE * MASTER * VISA * BANKCARD * AMEX ACCEPTED



SUPERIOR PERFORMANCE INKJET REFILLS

OUR INKS ALWAYS PRINT AS GOOD, IF NOT BETTER THAN THE ORIGINAL!

BLACK INKJET REFILL KITS FROM ONLY \$29.90

BLACK KITS INCLUDE SUPERIOR, DENSE & SHARP BLACK INK!!

DESCRIPTION (Kits Compatible with Printers listed below)	No. of Refills	Kit Code
CANON BJ-30/BJC-70/BJC 80	60	21-BKL
CANON BC-01/02 BJ-10E/20/BJ-200/BJC-210/210SP/240/255	9	3-BKL
CANON BJ-300/330	7	4-BKL
CANON BJC-600/610/620	16	5-BKL
CANON BJC-4000/4100/4200/4300/4550/5000/5500 BCI-21	45	19-BKL
CANON BJC-4000/4100/4200/4300/4550/5000/5500 BC-20	9	18-BKL
HP Desk Jet 400/500 Series	6	8A-BKL
HP Desk Jet 600/660/690 Series	6	8B-BKL
HP Desk Jet 700/850C/855C/870C/1000C Series	6	29-BKL
HP Deskjet 300 Series & Olivetti JP's!	8	7-BKL
EPSON Stylus 400/800/800+/1000	8	1-BKL
EPSON Stylus Colour /PRO/XL	8	2-BKL
EPSON Stylus 820/colour II/Is	12	23-BKL
EPSON Stylus Colour 200/300/400/500/600/800/850/1520	12	33A-BKL
IBM/LEXMARK 4076/1000/1020 Series	12	33B-BKL
IBM/LEXMARK 5000/7000 Series	6	35A-BKL
CANON, EPSON, HP Fluorescent & Photo Realistic Kits!	12	35B-BKL

Please Call!

NEW INKS

100% SATISFACTION GUARANTEED

AUSTRALIAN MADE

COLOUR INKJET REFILL KITS FROM ONLY \$39.90

COLOUR KITS INCLUDE CYAN, MAGENTA & YELLOW INKS!!

DESCRIPTION (Kits Compatible with Printers listed below)	No. of Refills	Kit Code
CANON BJC-70/80	3x30	22-CLR
CANON BJC-210/210SP/240/255	3x12	25-CLR
CANON BJC-600/610/620	3x8	10-CLR
CANON BJC-4000/4100/4200/4300/4550/5000/5500 BCI-21	3x30	17-CLR
HP Colour Desk Jet 300/400/500 Series & Olivetti	3x12	14A-CLR
HP Colour Desk Jet 600C/660C/690C Series	3x12	14B-CLR
HP Desk Jet 850C/855C/870C/1000C Series	3x3	30A-CLR
HP Desk Jet 710/720/890 Series	3x3	30B-CLR
EPSON Stylus Colour /PRO/XL	3x4	16-CLR
EPSON Stylus 820/colour II/Is	3x12	24-CLR
EPSON Stylus Colour 200/300/400/500/600/800/850/1520	3x12	34A-CLR
EPSON Stylus Colour 440/640/740	3x12	34B-CLR
IBM/LEXMARK 4076/1000/1020 Series	3x6	36A-CLR
IBM/LEXMARK 5000/7000 Series	3x6	36B-CLR
CANON, EPSON, HP Fluorescent & Photo Realistic Kits!	12/Colour	Please Call!
New!! Epson Photo 750 & Canon Photo 7100 Refill Kits!		

BUY 3 GET 1 FREE

Australia's best range of high quality papers and media also available for immediate delivery!



REUSE
RECYCLE
REFILL

USING NEW REALITY RESOURCES INKJET REFILL KITS WILL NOT VOID YOUR PRINTER'S WARRANTY.
All brand and product names are registered trademarks of their respective owners and used solely for descriptive purposes.

AUSTRALIA WIDE FREECALL 1800 680 605

New Reality Resources Pty. Ltd.

Australia Wide FREECALL - 1800 680 605

OLD Phone - (07) 3245 2411 Fax - (07) 3245 2755

VIC Phone - (03) 9878 8288 Fax - (03) 9878 3933

Bayside Business Park

Shop 1 / 70 Redland Bay Rd

Capalaba Q 4157



FREE AUSTRALIA WIDE DELIVERY! SAME DAY DISPATCH!!
COD * MONEY ORDER * CHEQUE * MASTER * VISA * BANKCARD * AMEX ACCEPTED



SAVE at least 60%
at print costs with our
cheap inkjet refills



NaSa Technology Pty Ltd

Unit 7, 119 - 133 McEvoy St
Alexandria, NSW 2015

<http://www.nasa.com.au>

email: sales@nasa.com.au

GREAT Prices!
Products!
Selections!
Services!



Kodak 4802 IDE CD ReWritable CD Drive \$419

offers a highly reliable 4X write speed, 2X rewrite speed with the power and performance of an 8X read speed. The Kodak CD ReWritable Kit with it's Enhanced IDE interface, can be installed easily and is fully compatible with almost any PC for true plug-and-play capabilities.

Kodak's CD-R/RW is ideally suited for writing and storing massive amounts of data, up to 650 MB per disk. Our CD-R/RW can write and read in a large range of formats including multi-session Photo CD and CD-DA so you can store original photos, internet images and more. Includes Cables, WinonCD 3.6 ToGo! and 2 Blank CD's. De-Hiss feature for Audio recording, convert MP3 files into CD-Audio format and also includes a 5m Audio cable for HiFi connection! USB Version available soon.

USB 4 Port Hub \$59, PCI USB Card \$45 USB to Printer Cable \$50

IRQ's a problem? Not anymore! Now with USB devices becoming commonplace and highly economical, USB is the number one solution for all your computer peripherals. With NaSa's stunning range of USB 4 Port Hub, PCI 2 Port USB Card and USB to Centronics Parallel Printer Cable, any computer can enjoy the benefit of multiple USB devices running simultaneously on your computer.



Blank CD's
from as low
as
\$1.95

HotBurn!
CD Writing
Software

Only
\$39.95



\$65
only



Pressit Kit

For Professional Quality CD
Labels & Jewel cases.
Everything You need in one box

External cases

for CDROM drives, hard drives and other peripherals. Available in both IDE and SCSI (50 pin).



External IDE CD ROM Case - External IDE CD ROM Case - with a 25 pin cable which connects to any Windows 95/98/NT or DOS systems via the parallel port with pass through port for both convenience and reliability. Also compatible with our Laser IDE removable hard drive kits. **\$130**

SCSI Case - These will fit any half height 50 pin SCSI device. Just plug it in and set the rear SCSI ID selector to a free number and off you go. 50 pin Centronics pass through interface. Available in both a single device or dual device case.

Single \$130, Double \$169

Laser Removable Hard Drive Kits



Laser Removable Hard drive kit	\$25.00
Laser Removable Hard Drive Kit with Fan	\$29.00
Laser Removable Hard Drive Kit with Aluminium Case and Fan for high speed drives >5400 rpm	\$59.00
Laser Hot Swap Removable Hard Drive Kit with Fan - suitable for IDE MO, LS120, ZIP and Hard Disk Drives	\$110.00
Drawer for above Kits also available	\$19.00

Call NaSa on **02-9699-8888**
or fax us on **02-9699-5188** or **02-9699-5288**

Dealer Enquiries Welcome!

A snapshot of the latest Kodak cameras.

Kodak *ds*
digital science™



Supports
USB for fast
image
transfer to
your PC.

From
£1437.00

DC280

The DC280 is perfect for people who want photo realistic 8" by 10" prints from a sophisticated point and shoot digital camera. Take up to 300 photos, download them fast and create great looking prints.

- 2 Megapixel resolution (1760 x 1168) for photo-realistic 8"x10" prints.
- 2X optical zoom plus 3X digital zoom
- USB for 10x transfer speed
- 20MB compact flash card, ability to capture 70-300 images.

P&W Code	Description	Price (inc)	(ex)
DIGITAL CAMERAS			
DC10	DC200 Digital Camera + Card Reader + 4MB Card	802.50	890.60
DC26	DC216 Silver Digital Camera + 4MB Card	787.00	873.28
DC27	DC215 Gold Digital Camera + 8MB Card + USB Card Reader	960.00	821.36
DC15	DC220 Digital Camera + 8MB Card	882.50	757.20
DC24	DC240 6X Zoom Megapixel Digital Camera + 8MB Card	1137.50	968.20
DC25	DC265 Digital Camera + 16MB Card	1624.50	1390.04
DC28	DC280 USB/Serial Digital Camera + 20MB Card	1437.00	1221.76
DC30	DC290 USB/Serial Digital Camera + 20MB Card	1799.00	1538.28
DC29	DVC325 Multimedia USB Camera	216.00	184.48
ACCESSORIES			
DC12	2MB Compact Flash Picture Card + PCMCIA Adaptor	39.28	33.28
DC06	4MB Compact Flash Picture Card	57.48	48.72
DC05	10MB Compact Flash Picture Card	107.88	91.44
DC09	10MB Compact Flash Picture Card + PCMCIA Adaptor	141.60	120.04
DC18	20MB Compact Flash Picture Card + Adaptor	176.32	148.48
DC19	32MB Compact Flash Picture Card + Adaptor	211.00	178.88
DC04	48MB Compact Flash Picture Card + Adaptor	265.56	224.40
DC03	64MB Compact Flash Picture Card	275.48	232.80
DC11	DC205/4050/120 AC Power Adaptor	52.16	52.16
DC13	DC200/series AC Power Adaptor	51.12	51.12
DC01	DC260/265 Lens Adaptor for 37mm Lens	26.96	23.20
DC02	DC200/200+210/210+ MAC Interface Kit	49.50	41.60
DC17	DC220/260 USB Interface cable	39.28	33.28
DC30	DC401/200/200/200+ Super Wide Angle Lens	172.20	148.24
DC21	DC401/200/200/200+260/265/290 Close Lens Kit(3)	91.12	77.24
DC22	DC401/200/200/200+260/265/290 Deluxe Lens Kit	225.44	191.12
DC31	Kodak Camera Bag for DC200 Series	55.68	47.52



From
£787.00

DC215

The DC215 is the perfect choice for anyone who loves taking, making and creating beautiful pictures. Create photo-realistic 5" x 7" prints. Available in two body designs with new silver champagne metal skinned body on standard model or unique gold metal skinned body on premium model.

- Smaller, easier to handle size, 20% smaller than the DC210 Plus
- 4.6cm LCD for review/preview
- 4MB picture card (Silver), 8MB picture card (Gold)
- USB card reader included for rapid transfer of image to computer
- Bundled with Adobe PhotoDeluxe and USB card reader.
- Software and drivers for both Mac and PC.



See our web site for the full range

From
£216.00

DVC325

- High Quality still images - 640 x 480 pixel colour pictures.
- Full motion video with 25-30 FPS and adjustable quality setting
- USB interface
- Detachable base
- Includes TWAIN driver, Presto Video Works, and Microsoft NetMeeting software.

EPSON



Introducing the latest additions to the Epson Stylus family of colour inkjet and photo printers



Epson Stylus Color 900 - The FASTEST desktop inkjet printer today

The Stylus Color 900 prints up to 12ppm - an amazing one page every five seconds!

Ideal for the busy office with a variety of business needs such as laser-quality black text, colour presentations and graphs

Epson Stylus Color 460

EPSON has made an ink jet printer that's simple to use, lots of fun and very low cost. It brings 720 x 720 dots per inch of Photo Quality colour and laser sharp black text right into your very own home.

- 100 sheet paper capacity
- Parallel port interface
- Compatible with Windows 3.1/95/98.
- Photo Enhance 4 software



From
£250.00



See our web site for the complete range

Epson Stylus Color 660

As the line between work and play gets harder to define, you need a printer that's ideal for both home and office use. Exclusive Micro Piezo™ print head technology brings you 1440 x 720 dots per inch of inspiring color images and laser sharp black text.

- 100 sheet paper capacity
- Parallel port interface
- Compatible with Windows 3.1/95/98.
- Photo Enhance 4 software

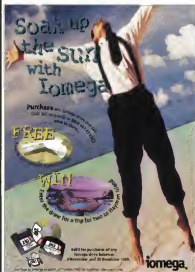
P&W Code	Description	Price (inc)	(ex)
RP00	Stylus Color 300	172.50	148.00
RP14	Stylus Color 460	250.00	213.00
RP15	Stylus Color 660	328.00	279.50
RP16	Stylus Color 760	538.50	459.00
RP18	Stylus Color 860	599.00	511.00
RP11	Stylus Color 900	810.50	699.50
RP17	Stylus Color 1160	1017.00	867.50
RP07	Stylus Color 3000 A2	2282.00	1941.50
RP13	Stylus Photo 700 A4	421.50	356.50
RP12	Stylus Photo 1200 A3	958.00	815.00

iomega®

zip 250

Soak up the sun with iomega

Purchase any iomega drive and telephone 1300 360 947(AUS) or 0800 447 431(NZ) to claim. Receive a fantastic beach chamois and enter the draw for a trip for two to Hayman Island. Valid for purchases of any iomega drive between 1 November and 31 December 1999.



USB Zip drive

Now iMAC® and USB-enabled PC users running Windows 98 can connect iomega's sleek, translucent ice-blue USB Zip drive, and reap the benefits of simple connectivity and unlimited storage capacity.

ZipCD drive

iomega®

The internal iomega® ZipCD™ drive is the perfect complement to any hard drive. It reads, writes, or rewrites many types of CD formats, making it an ideal storage solution for users who want to copy and share files with co-workers, service bureaus, and even friends and family. The internal ZipCD drive performs at a speed of 4X Record, 4X Write, and 24X Max Read. You can use standard CD-Recordable (CD-R) and CD-ReWritable (CD-RW) discs to organize and archive files without cluttering up your hard drive or the network. And for road warriors, CDs are an efficient way to transport and exchange large files.

click! PCMCIA Clik Drive



Clik drive

A lightweight and highly mobile removable storage drive, the Clik! PC Card Drive fits into the PC card slot of most of today's notebook and sub-notebook computers. It comes ready to run and with no extra cables or batteries, is easy to install and use. Half the size of a credit card, Clik! disks hold an amazing 40MB!



PWW Code		Inc Tax	Ex Tax	5-9 Inc	5-9 Ex	10+ Inc	10+ Ex
ZIP DRIVES							
DD115	250Mb Zip External Drive Parallel Port	294.50	258.00				
DD116	250Mb Zip External Drive SCSI	294.50	258.00				
DD119	250Mb Zip External Drive USB	355.00	298.00				
DD120	250Mb Zip Internal IDE/ATAPI Drive	296.00	248.00				
DD121	250Mb Zip External PCMCIA/USB Drive	406.00	340.50				
DD104	100MB Zip P/Port Kit(Drive+4 Col. disks)	241.50	210.50				
D620	100MB Zip EPP Parallel Port Ext. Drive	191.00	167.90				
D6211	100MB Zip SCSI Internal Drive	232.50	205.20				
DD117	iomega 250MB Zip Cartridge PC format	35.80	30.70	34.40	29.30	32.90	27.80
DD118	iomega 250MB Zip Cartridge Mac format	35.80	30.70	34.40	29.30	32.90	27.80
D624	100MB Zip Cartridge PC format ZipK Colour	41.85	35.90	40.20	34.25	38.45	32.50
D625	Zip 100Mb Cartridge PC format	19.85	16.80	19.20	16.35	18.35	15.50
D627	Zip 100Mb Cartridge Mac format	19.80	16.90	19.40	16.50	18.50	15.60
ZIP CD							
DD190	ZipCD 4X4X24 CDRW Internal IDE Drive	413.00	351.00				
DD130	Clik! 40Mb Drive for Digital Cameras	451.00	377.00				
DD131	Clik! 40Mb Drive Plus for Mobile Comput.	568.00	475.00				
DD132	Clik! 40Mb PC Card Type II Drive	363.50	318.00				
DD135	Clik! 40Mb Disk	18.90	16.15	18.50	15.75	17.70	14.95

Shop online and have all this at your fingertips.

PAW Products Pty Ltd ACN 058 019 837 1/3 Gibbes Street, Chatswood NSW 2067 Telephone 1800 677 729 Fax 1800 677 329

PAW.COM.AU

CISCO SYSTEMS

Big Business Networking for Small Offices and Corporate Telecommuters



From
\$1119³²



Cisco 800 Series Router

The Cisco 800 Series router provides small offices and corporate telecommuters essential benefits such as:

- End-to-end security,
 - Enhanced Internet access
 - Reduced cost of ownership
- Together, these benefits enable small offices to easily connect to the Internet and allow corporate telecommuters to access a corporate LAN via the Internet using a virtual private network (VPN) and other security features. The Cisco 800 Series offers the most complete range of security options available in any SOHO router, including the Cisco IOS Firewall feature set and IPSec.

Designed to provide easy Internet access through a service provider network, the Cisco 800 Series router

is available in 3 configurations, each of which has a built-in Ethernet and ISDN port:

Cisco 801: One Ethernet port, one ISDN BRI with S/T port

Cisco 803: One Ethernet four-port hub, one ISDN BRI, S/T port, two analog ports for plain old telephone service (POTS) connectivity

Cisco 805: One serial WAN, One Ethernet LAN interface.

The integrated firewall features include dynamic context based access control, Java blocking, and protection from denial-of-service attacks.

Ease-of-use and plug-and-play features (such as color-coded cabling) make it possible for non-technical personnel to quickly install and configure Cisco 800 Series routers.



NEW!

From
\$2874²⁸

Cisco 1750 Access Router

The Cisco 1750 Modular Access Router is the single solution for giving branch offices and small/medium-sized businesses robust WAN data connections today - with a smooth migration path to integrated multiservice networking to support data, voice, and video whenever they're ready. Delivering all the versatility and power of Cisco IOS software, the modular Cisco 1750 router offers:

- Secure Internet, intranet, and extranet access with optional firewall capability.
- Easy multiservice data/voice/fax integration, whenever you're ready VPN access supported by hardware-based encryption.

The Cisco 1750 Router allows businesses to:

- Adapt easily to changing requirements.
- Protect investments in current solutions even as demanding new services emerge - such as integrated voice and data, virtual private networks (VPNs), and broadband access.

PAW Code	Description	Price (inc)	(Ex)
BRC00	Cisco 801 Router	1119.32	939.56
BRC01	Cisco 803 Router	1260.40	1056.00
BRC02	Cisco 805 Router	1404.28	1178.76
BRC10	Cisco 1750 Router	2874.28	2412.72

SWITCHVIEW™

If you have more than one PC at your desk, you need a Cybex Switchview



2 Port from
\$315⁵⁰

New Cybex Eagle
8-Port Now Available!
See web site
for details



PAW Code	Description	Price (inc)	(ex)
BBC00	Cybox SwitchView 2 Port	315.50	269.50
BBC00	Cybox Switchview Commander 2port	315.50	269.50
BBC01	Cybox Switchview Commander 4port	387.50	339.50
BBC02	Cybox Eagle 8port KVM Switch	1169.50	968.00
BBC03	Cybox Eagle 8port + 8x 1.8m Cables	1521.50	1285.50
CABLES			
A214	Monitor VGA DB15m-1.8 metres	12.95	11.25
A218	Mouse/Keyboard PS/2 Cable 1.8 metres	12.95	11.25
B845	Cybox Eagle 1.8metres Custom Cable	93.00	79.50
B846	Cybox Eagle 2.4metres Custom Cable	125.50	107.00
B847	Cybox Eagle 5metres Custom Cable	199.50	170.50
B848	Cybox Eagle 10metres Custom Cable	300.00	256.50

Control up to 4 PC's with one keyboard, monitor and mouse!

- Control up to 4 PCs with one keyboard, monitor and mouse. Cascade up to 64 computers.
- Switch via hot-key or front panel button
- Fully supports PS/2, serial mouse and Microsoft Intellimouse
- Uses industry standard cables
- LEDs indicate which computers are on-line and which one is selected

- FCC class B certified
- No external power supply needed
- No DIP switches
- Supports screen resolutions of up to 1600 x 1200 pixels at 86Hz refresh rate
- Better than a manual switchbox, the SwitchView provides mouse translation between PS/2 and serial connections.



MAUS Business Solutions



From **\$174⁰⁰**

FREE
Business Letter
Writing Software with
every Bundle Pack
Valued at \$59



From **\$174⁰⁰**

MAUS Performance Review was described by PC Authority as "one of the first products any manager should load onto their PC". Create accurate, personalised employee reviews in minutes! Use the simple 1 - 5 grading system to rank your employees in each area and let the software write the review for you with clear natural text flows!

Professional Masterplan

Business & Marketing Plans The Easy Way. MAUS MasterPlan for Windows™ is designed for people who need a winning, professional Business Plan instantly. A step-by-step question and answer format enables you to construct full financials, text and graphics at the click of a button. With MAUS MasterPlan, your Business Plans will be more effective, more impressive, and greatly improve your success! Also available MAUS MasterPlan Enterprise Edition® with 5 User Licence and Fully Customisable.

MAUS Stockmarket Plus

Over 5.5 million Australians are now investing in the stock market... grab your slice of the action now! Professional investment advice in simple English. Manage stocks, personal finances and property. Track investments in any ASX listed company. Download stock prices for fast, accurate analysis

Microsoft®

Update your Office with the power of the Internet

Microsoft Office 2000 Premium

Our most comprehensive productivity solution ever, Microsoft® Office 2000 Premium delivers on the promise of the Web. Eight powerfully integrated applications that make it easier than ever to access and share information.

- Manage your day efficiently. Send and receive e-mail, coordinate schedules, and track activities with your contacts - using personal information management in Microsoft® Outlook®.

- Create a great Web site easily with Microsoft® FrontPage®. You can edit, update and manage it all from within a single view.

- Create professional, custom graphics for print, presentations, and the Web with Microsoft® PhotoDraw™
- Share your work online. Create a document in Microsoft® Word or any other Office application and publish to your Web server.

- Work smarter as a team. Use Microsoft® Excel to quickly publish interactive spreadsheets, charts, and PivotTable® solutions to your intranet so your coworkers can perform their own analysis.

- Create, manage, and share a database. Microsoft® Access makes it easy to organize your data and share it online for better business decisions.



Microsoft Office 2000 Small Business
Microsoft® Office 2000 Small Business offers the tools you need to manage your small business.

Microsoft® Office 2000 Small Business combines four of the productivity applications that businesses rely on every day. For managing customer relationships, accessing and analysing information, Office Small Business helps you do it more efficiently and easily than ever.

- Communicate with and track customers more effectively. Microsoft® Outlook® helps you track all e-mail, tasks, and appointments.

PAW	Price
XMM00 Office 2000 Premium W32 CD	1158.50
XMM01 Office 2000 Premium CVUP	593.00
XMM02 Office 2000 Premium CVUP+Intelmouse	618.00
XMM05 Office 2000 Professional	867.00
XMM06 Office 2000 Professional CVUP	903.50
XMM10 Office 2000 Small Business Edition W32	721.00
XMM11 Office 2000 Small Business Edition CVUP	590.00
XMM15 Office 2000 Standard W32 CD	721.00
XMM16 Office 2000 Standard CVUP	590.00
XMM20 Works 2000 Standard	90.50
XMM25 Windows 98 CD 2nd Edition	294.50
XMM26 Windows 98 CD VUP 2nd Edition	145.50
XMM27 Project 98 CD	713.00
XMM28 Project 98 CD VUP	286.00

PAW.COM.AU
Shop online and have all this at your fingertips.
PAW Products Pty Ltd ACN 058 019 837 1/3 Gibbes Street, Chatswood NSW 2067 Telephone 1800 677 729 Fax 1800 677 329

Get more power for 30,000 or less! **Stuck!**

Save Up to 80% of New Price!

Intel Pentium 200MHz Upgrade.....\$299

Get the tried old 486 to a Pentium with power for Windows 95 and the ability to net including Pentium PCI Motherboard, RAM, Genuine Intel Pentium 200MHz CPU, and Fan & 2MB PCI Video Card, and find out the unbelievable price!

Pentium PCI Mainboard
Intel Pentium 200MHz CPU
32MB RAM exp. to 256MB
Supports 4 X HDD, 2 X FDD
2 x Serial, 1 x Parallel
Heatsink & Fan
2MB PCI Video Card
Manuals & Cables Inc.
Configured & Tested!

Intel Mainboard.....\$69

From 75 to 133MHz
2 Pin EDO or 3 Pin SIMM
259K Cache 3 Slots, 1 PCI slots,
100 uops, 8 I/O
16MB RAM

Stereo Sound Card.....\$35

Hi ISA Sound will give you the Hi Fi Sound when used with IDE CD ROM Interface. We won't have to use your HDD Interface and bring away a Desk Top Microphone. Free!

Brand New! Tower AT Case.....\$39

Like new attractive AT Form Factor case. Every supply will house anything! It will hold 486 to be in Pentium 400 PC and the power will not even blink to clear from you will save \$39.00

Floppy Disk Drive.....\$15

5 Floppy Disks Fully Tested and to get Save more 10% on New Price on Brand Name Drives.

16 Pin Power Supply.....\$15

100W Power supply can fit all most 100MHz with a 5 pin or mini tower. Will suit from 386 to 486.

30 Pin RAM for 486.....\$20

This very hard to get memory is below wholesale price until stocks last. Normal New Price \$39.00. They are out of stock of PCs and they are fully tested for heatsink fan running. Buy 4 pcs. for \$69.00

72 Pin Fastpage RAM.....\$30

Bring in a time of time! These Pulls are like new and will work in 486 or Pentium's. 100% Guaranteed! Don't pay normal Retail Price of \$67.00. Only While Stocks Last!

Refurbished Monitors.....\$49

1 Mono Monitor for POG.....\$149
1 VGA Colour Monitor.....\$99
1 VGA Colour Monitor 1024 x 768 Res.....\$129
1 VGA Colour Digital 1024 x 768 Res.....\$119
1 VGA Colour Monitor 1024 x 768 Res.....\$189
1 VGA Colour Monitor Hi Res.....\$219

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

D.I.Y. 486 Combo Kit.....\$39

Kit 1 - 486 Combo
486 VLB Motherboard
Intel DX2-66 Processor
VLB 1MB SVGA Card
8MB RAM.....\$49

Kit 2 - 486 Combo
486 VLB Motherboard
Intel DX2-66 Processor
VLB 1MB SVGA Card
16MB RAM.....\$75

Kit 3 - 486 Turbo Combo
486 VLB Motherboard
Intel DX4-100 CPU
VLB 1MB SVGA Card
16MB RAM.....\$115

Multimedia Microphone.....\$5

Omni Directional
Impedance: 1.4K
Frequency 90-13000Hz
60dB+ Sensitivity
Connector: 3.5mm Stereo

Intel Pent Pro 180 CPU.....\$149

Genuine Intel Pentium Pro 180 CPU with 256K Cache in full retail box including genuine Heatsink & Fan!

Desktop PC Case.....\$20

Case includes 200W PSB and houses up to 5-drives either 3 1/2" or 5 1/4" Like NEW!

External SCSI Case.....\$50

These SCSI cases support 2 X 25" drives at 10MB per second data transfer rate! Like new and you can easily add up to external case!

CD ROM & Sound Card.....\$59

16 Bit Stereo Sound Card with IDE Controller.....\$59
16 Bit Stereo Sound Card with IDE Controller.....\$59
16 Bit Stereo Sound Card with IDE Controller.....\$59

486 4X-100 CPU.....\$59

Go one step further and upgrade your 486 to 100MHz with a genuine Intel DX4-100 CPU. Available for 5Vt.

486 PCI Mainboard.....\$49

Super charge your 486 with PCI mainboard that runs both 3 & 5Vt CPUs. Supports 486 & 586 CPUs and has built in I/O and FDD/HD Controllers. Normally \$69.00. Save \$20.00!

Pentium Pro Combo Kit.....\$299

This Pentium Pro 180MHz with 256K Cache was the worlds fastest CPU and included PCI Mainboard, Genuine Intel Pentium Pro 180 Processor, 32MB RAM, IDE, HD & FDD Controllers, 1MB PCI Video Card, Cables, Manual, Tested & Configured! Save \$30.00

Intel Pentium Pro 180/256K Cache.....\$299

Includes Mainboard, CPU & Video Card

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Motherboards.....\$29

486 Mainboard 5 Vt VLB.....\$29
486 Mainboard 3Vt VLB.....\$39
486 PCI Mainboard 3Vt VLB.....\$49
Pentium Mainboard up to 160MHz.....\$69
Pentium TX Pro 233MMX.....\$99
Pentium Pro up to 200MHz.....\$29

Processors (CPU).....\$19

Intel 80486 DX2-66 3 Vt.....\$19
Intel Pentium 75MHz.....\$100
Intel Pentium 90MHz.....\$110
Intel Pentium 100MHz.....\$120
Intel Pentium 133MHz.....\$129
Intel Pentium 166MHz.....\$159
Intel Pentium 166MMX.....\$170
Intel Pentium 200MMX.....\$199
Intel Pentium 233MMX.....\$219
Intel Pentium Pro 180MHz.....\$149

Memory - RAM.....\$12

1MB 30 Pin Simm.....\$12
4MB 30 Pin Fast Page.....\$20
16MB 72 Pin Fast Page.....\$20
32MB 72 Pin Fast Page.....\$35
64MB 72 Pin Fast Page.....\$70

Video Cards.....\$10

ISA 512K SVGA Card.....\$10
ISA 1MB SVGA Card.....\$15
VLB 1MB SVGA Card.....\$15
VLB 2MB SVGA Card.....\$25
PCI 1MB SVGA Card.....\$25
PCI 2MB SVGA Card.....\$39
PCI 4MB SVGA Card.....\$55

Controllers & I/O Cards.....\$6

ISA 16BR Super I/O.....\$6
VLB I/O.....\$10
VLB I/O Enhanced 4 x HDD.....\$25
SCSI Adaptor 1542B.....\$69
External SCSI Card controllers.....\$5
External SCSI Terminators.....\$5

Multimedia.....\$59

Creative 16 Bit Stereo Sound with IDE Controller.....\$59
16 Bit Stereo Sound Card.....\$29
120W Speakers 2.0V.....\$29
Quad Speed IDE CD ROM Drive.....\$59
40 X CD ROM Drive.....\$99

Mass Storage (HDD, FDD).....\$15

3.5" 1.44MB FDD.....\$15
80MB IDE HDD.....\$16
130MB IDE HDD.....\$25
210MB IDE HDD.....\$40
245MB IDE HDD.....\$50
340MB IDE HDD.....\$65
420MB IDE HDD.....\$79
400MB IDE HDD.....\$125
1.2GIG IDE HDD.....\$125
2.1GIG IDE Big Foot HDD.....\$175

Input Devices.....\$9

New 2 Button Serial Mouse.....\$9
MS 52 2 Button SerialPS/2.....\$15
MS Ergo 2 Button SerialPS/2.....\$15
101 Key AT Keyboard.....\$12
Honeywell 101 Key Keyboard.....\$12
New Win '95 Keyboard.....\$19

PC Cases.....\$50

External SCSI Case & P/S.....\$50
Desktop Case & P/S Supply.....\$30
Mini Tower Case & P/S Supply.....\$30
New Mini Tower Case AT.....\$55
New ATX Mini Tower Case.....\$59
200W Power Supply.....\$15

Modems.....\$59

33.6 External Modem.....\$59
56K V.90 Internal Modem.....\$99
Includes 35hrs Internet Access
56K V.90 External Modem.....\$145

Network Pack.....\$29

2 X RJ45 network cards plus 5mins of Cable plus documentation.....\$30
SMC RJ45 Network Cards.....\$10
Combo Coax/RJ45.....\$15
PCI RJ45 Network Card.....\$29

Genuine Intel Pent. 200 MMX.....\$299

This very rare 2.8 Volt genuine Intel 200MHz MMX CPU is now available at this ridiculous price! Upgrade from slow Pentium to MMX, surf the net with ease and find out how multimedia should run!

Intel Pentium Pro 180/256K Cache.....\$299

Includes Mainboard, CPU & Video Card

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

Factory Return Hard Disk Drives.....\$129

1 20GB Hard Disk Drive.....\$129
1 40GB Hard Disk Drive.....\$149
1 60GB Hard Disk Drive.....\$169
1 80GB Hard Disk Drive.....\$189
1 100GB Hard Disk Drive.....\$209

RED Hot XMAS Special

Only until XMAS or while stocks last

BM - Compaq Sale

Make no mistake, these are strictly limited!

Pentium Now On \$499

14" SVGA Colour Monitor
1MB SVGA Video Adapter
16 Bit Sound Card
40 X IDE CD ROM
120W 240V Amplified Speakers
101 Keyboard & Mouse
Refreshed & Ready to Go!

Pentium Now Or \$549

Includes 6 Free CDs - Encyclopedia

These brand name personal computers will suit any home or small business. The fact that genuine IBM's and Compaq's means you will have many years of enjoyment whether surface net, homework, accounting or just a great workstation for the price conscious buyer! Just be there, after 24 months old it doesn't mean they won't perform the latest multimedia!

SOHO Pentium Pro 180MHz with 256K Cache.....\$69

Intel Pentium Pro PCI Mainboard
32MB RAM exp. to 256MB
3.5" FDD
1.2GIG IDE HDD
1MB PCI Video Card
40X IDE CD ROM Drive
16 Bit Stereo Sound Card
120W Amplified Stereo Speakers
104 Key Win 95 Keyboard & Mouse
14" SVGA Colour Monitor
Attractive Mini Tower Case
Fully Refurbished & Formatted!

GTS Pentium 233MMX.....\$89

Genuine Intel Pentium 233MMX CPU
Pentium PCI Mainboard
32MB RAM exp. to 512MB
3.5" FDD
2.1GIG IDE HDD
1MB PCI Video Card
40X IDE CD ROM Drive
16 Bit Stereo Sound Card
120W Amplified Stereo Speakers
104 Key Win 95 Keyboard & Mouse
15" NEC SVGA Colour Monitor
Attractive Mini Tower Case
Fully Refurbished & Formatted!

17" Digital Samsung, IBM Hi Resolution SVGA Colour Monitors.....\$349-\$499

Now with 17" Digital Samsung, IBM Hi Resolution SVGA Colour Monitors and we want to move the lot!

17" Digitally Controlled 1278 x 1024 Resolution Low Radiation Non-Interlaced 16 Million Colours Cables Included Like Brand New Condition!.....\$349-\$499

Starting at \$349-\$499 Normal New Price \$799

Now with LAY-BY TILL XMAS.....\$20.00

We will deliver your personal Computer anywhere in Australia for only \$20.00 per week!

This includes Monitor & Computer! Insurance is calculated at \$2.00 per item/week and is added to freight

Don't Pay till you get your goods anywhere in Australia.....\$20.00

Plus 30 Day Money Back Warranty! (on faulty goods only)

Open 6 Days a Week.....\$20.00

Week days 9.00-5.00pm & Sat 10.00-3.00pm

AUSTRALIAN COMPUTER RECYCLE.....\$20.00

The Ultimate Solution

Dealers Welcome **PLEASE RING** For latest system **PRICES & PARTS!!**



Discovery
AMD K6-2-450 Processor/AMD Fan
Giga-byte GA-54X Motherboard
6.4 GB Quantum CX Hard Disk Drive
Mega-MII-6200-8MB
Dimm-64MB SDRAM PC 100
Mitsubishi 1.44 Floppy
GS-280 Speakers
Diamond 40 X CD Rom
SB-128 PCI Sound Card
C-EVE1 Medium TOWER CASE
KK-2500 Keyboard
WWW-9 Mouse/V1456-PCI
Mitsubishi -15" 1554e Monitor
Windows 98 2nd Edition

\$1,499

Challenger
Intel Celeron 400MHz/ Intel Fan
Giga-byte GA-6L4T Socket 370
6.4 GB Quantum CX Hard Disk Drive
Mega-MII-6200-8MB
Dimm-64MB SDRAM PC 100
Mitsubishi 1.44 Floppy
GS-280 Speakers
Diamond 40 X CD Rom
SB-128 PCI Sound Card
C-EVE1 Medium TOWER CASE
KK-2500 Keyboard
WWW-9 Mouse/V1456-PCI
Mitsubishi -15" 1554e Monitor
Windows 98 2nd Edition

\$1,545

Apollo
Intel Pentium III-550MHz MMX
Giga-byte GA-8X2000/Pentium Fan
13.0 GB Quantum Hard Disk Drive
SONY DVD Drive
Dimm-128MB SDRAM PC 100
Mitsubishi 1.44 Floppy
Lonsen LS-880 Speakers
SB-128 PCI Sound Card
Apollo TNT2 ULTRA-32 TV/0 Video Card
C-EVE1 MEDIUM TOWER CASE
KK-2500 Keyboard
WWW-9 Mouse/V1456-PCI
Mitsubishi -17" 1772e Monitor
Windows 98 2nd Edition

\$2,950

The Probe
AMD K7-600 Anthraion Processor
Giga-byte GA-71X Motherboard
AMD K7 Anthraion Fan/Sony DVD
13.0GB Quantum KA Hard Disk Drive
Dimm-128MB SDRAM PC 100
Monitor MGA-G4-32 Max
SB-Live Value OEM/Lonsen LS-880 Speakers
C-V15350 MEDIUM TOWER CASE
WWW-11 Mouse/V1456-PCI
KK-2500 Keyboard
Sony CRK-100 EDB Kit
Mitsubishi LS-120
Mitsubishi -17" 1772e Monitor
Windows 98 2nd Edition

\$3,995

Specials
SONY CRX-100EBK
4xWrite/2xReWrite/24xRead
Easy Cd-Creator/CD-Direct
1xCDRW & CDR Media

SONY CRX-120EBK
4xWrite/4xReWrite/24xRead

SONY DDU-220E 6X
with WINDVD Software

Artec 1440x1050
600x1200 16.5" Screen

\$350

\$430

\$170

\$165

Apollo TNT2 Vanta 32MB
AGP Video Card

\$165

TERMS & CONDITIONS:

All prices listed includes sales tax and are subject to change without notice.
All prices for systems, are based on Cash. Bank Cheque and all major credit cards.
Please note Visa/Master & Bank Card add 2% Amer & Drivers add 3.5%
All cheq. and direct deposits need 7 working days clearance. A \$20 fee to apply with all cheques bounced.
(For updated pricing please call our friendly sales staff)

ORDERING & PAYMENT:

Ordering can be done by telephone, fax, e-mail

WARRANTY & RETURNS:

All goods sold carry manufacturer's warranty, either back to base or direct to the manufacturer's. We can't always guarantee compatibility. It is the customer's obligation to ensure that the correct goods are ordered. Before returning goods, you must obtain an RMA from us by phoning our support line. The returned goods must be unopened and well packaged for return within 7 days of receipt and sent by a traceable method of transport. The returned goods will apply to all goods returned after 7 days warranty void. If goods are found to be non-compliant with or Warranty/Defect repaired. All delivery and insurance cost must be borne by the customer. Software is NOT refundable if opened.



- **SAVE YOUR MONEY** Renting keeps your money working in more profitable ways for your business, not tied up in office equipment that rapidly loses value and can be superseded by better models. With RentSmart, you can get the best business equipment, plus it saves your money to put to a better use.
- **SPREAD YOUR COSTS** Instead of paying one large, upfront cost you can spread affordable monthly payments over the useful life of your equipment. This is usually 2-4 years. Talk to the wise "RentSmart Specialist" and they'll help you choose the best rental term for your business.
- **RENTALS ARE FULLY TAX DEDUCTIBLE** When your equipment is used solely for business, your rentals are 100% tax deductible. Consult your accountant for further advice.
- **OUT WITH THE OLD, IN WITH THE NEW** You can update to new technology or add new equipment whenever you need to. It's why renting allows you to stay in touch with and benefit from today's rapid changes in technology.
- **GET MORE EQUIPMENT!** You can bundle together a wide range of business equipment, computer software and even office furniture all into one convenient RentSmart plan. It's **EASY 10 MINUTE APPROVAL**. RentSmart's documentation is easy to complete and RentSmart rep approves the purchase of office equipment worth up to \$15,000 in just 30 minutes. Simply choose the equipment and furniture you want and RentSmart will do the rest.

THX COMPUTER THE HARDWARE X-PERT

89 York St. Sydney NSW 2000 Tel: (02) 9262 1588, 9262 1697 Fax: (02) 9262 1737

© All other trademarks are the property of their respective owners.

Shop on the Web www.corpsoft.com.au

NEW FOR WINDOWS 95 AND NT

• Paint Shop Pro Version 6



\$189

• CorelDRAW Version 9



Upgrade **\$389***
*After \$50 CASHBACK
(Offer end Nov 30)

• NORTON SystemWorks 2000 - Version 3



Standard **\$125**
Professional **\$149**

• Seagate Backup V7.3 (New from Veritas)



NT Server **\$859**
NT Enterprise **\$1795**
Win 95/98 V3 **\$125**

EVERY DAY LOWEST PRICES

ACT 2000 for Win95/NT	\$155
Adobe Acrobat V4 - New Install	\$395
• SPECIAL Adobe Illustrator V8	\$595
Adobe InDesign SPECIAL!!!	\$995
Adobe InDesign - Crossgrade	\$490
Adobe PageMaker 6.5 PLUS	\$750
Adobe Photoshop V5.5 NEW!!!	\$995
Adobe Web Collection	\$1825
ArcserveIT V6.6 W/Group Ed	\$750
AutoCAD LT 2000 NEW!!!	\$789
AutoCAD LT 2000 - Upgrade	\$289

**Adobe
Photoshop
V5.5 NEW for \$99**

New Install **\$995**
Upgrade **\$349**

Borland C++ Build.ProV4 - Upg	\$389
Borland C++ Build.ProV4 - New	\$589
Borland J Build.ProV3 - Upg	\$379
Borland J Build.ProV3 - New	\$589
Borland Delphi Pro V5 - New Inst.	\$689
Borland Delphi Pro V5 - Upgrade	\$389
ClickNet Professional V5	\$695
CorelDRAW V9 - New Install	\$625

CorelDRAW V9 - Upgrade **\$389***
*After \$50 Cashback

Corel W/Perfect Office 2000 NEW	\$369
Corel W/Perfect Office 2000 Upg	\$199
Corel W/P Office 2000 +Voice NEW	\$458
Corel W/P Office 2000 +Voice Upg	\$258
Crystal Reports Pro V7	\$580
Crystal Reports Pro V7 Upg	\$330
Diskeeper V5 for NT Workstation	\$99
Diskeeper V5 for NT Server	\$495
Dragon Nat. Speaking Mobile	\$365
Dragon Nat. Speaking Pref. V4	\$289
Drive Image Personal Edition	\$108
Drive Image Pro V3 (10 user)	\$395
Easy CD Creator Deluxe V4	\$120

**Corporate
Special**

CD-RW
Blank Media **\$8 ea**

Lost & Found	\$108
Lotus Organizer V5 - NEW	\$109
Lotus SmartSuite Millen. Full	\$299
Lotus SmartSuite Millen. Upg	\$195

NEW Macromedia DreamTeam **\$929**
(Includes Flash, Fireworks & Dreamweaver 2)

Macromedia Dreamweaver2 - NEW	\$489
Macromedia Fireworks 2 - NEW	\$359
Macromedia FLASH V4	\$515

Macromedia Freehand V8	\$595
MasterClips 1,250,000	\$175
McAfee Office 2000 - NEW	\$98

McAfee VirusScan V4
(*after \$30 cashback) **\$40***

MS Collection 98 - NEW !!! (Includes: Money 98, Encarta Atlas, Greetings Workshop - 4CD set)	\$45
---	------

MS FrontPage 2000	\$169
MS FrontPage 2000 - Upgrade	\$89
MS IntelliMouse	\$59
MS Project 98 - NEW !!!	\$745
MS Project 98 - Upgrade	\$309
MS Publisher 2000	\$149
MS Publisher 2000 - Upgrade	\$119

• SPECIAL - MS VisualBasic V6 Pro **\$769**
• SPECIAL - MS Visual C++ V6 Pro **\$769**

MS Windows 98 New Install	\$299
MS Windows 98 Upgrade Rev.2	\$164

• SPECIAL - MS Word 97 **\$199**
• SPECIAL - MS VisualStudio Pro **\$1499**
• SPECIAL - MS VisualStudio Ent **\$2299**

MYOB Accounting V9 - NEW !!!	\$345
MYOB Plus V9 -including Payroll	\$495
Norton 2000 NEW V2	\$45
Norton AntiVirus 2000 NEW V6	\$75
Norton Cleansweep 2000 NEW V4.7	\$54
Norton Ghost - 10 user	\$345
Norton Ghost Personal Ed. V5.1	\$119
Norton SystemWorks 2000 Std V3	\$125
Norton SystemWorks 2000 Pro V3	\$149
Norton Utilities 2000 - NEW V4.5	\$79

**iGrafx
Professional**

NEW from Micrografx

\$555

Also available
iGrafx Business
\$165

OmniForm V4 - New for 1999	\$295
OmniPage Pro V9 Up/Cross	\$219
OmniPage Pro V9 - New Install	\$619
Paintshop Pro V6 - New Version	\$189
Partition Magic V4	\$108
Quicken Deluxe V7 (* after \$20 Cashback)	\$79*

Reachout Enterprise	\$278
Seagate Agent for SQL	\$895
Seagate B/Up V7.3 -NT Single Serv.	\$859
Seagate B/Up V7.3 -NT Multi Serv.	\$1795
Seagate B/Up V3 Win95/98	\$125
Smartern Essentials V8	\$369
TypeQuick (for Windows)	\$74
VET Net Surfer AntiVirus	\$83
Winfax Pro	\$115
WinZIP V7	\$65

LIMITED STOCKS OF Office 97 LEFT - HURRY!

Microsoft Office 97

ALL-TIME LOW PRICING

• Office 97 Std - New Install*	\$450
• Office 97 Std - Upgrade	\$390
• Office 97 Pro - New Install*	\$550
• Office 97 Pro - Upgrade	\$490

MOLP / LICENCES

BUY 4 - GET 1 FREE

• Office 97 Std - New Install*	\$429
• Office 97 Pro - New Install*	\$529

*Upgrade bundle with competitive product - limited stocks

Visual BASIC Professional V6

\$429.00
(Save \$390)

This special offer is for owners of MS Office Pro

CORPORATE CLEARANCE



**NEW!!!
WinZip V7**

\$65.00
10 User pack
\$450



**Adobe
Acrobat V4**

Special -
New Install
\$395



**Macromedia
Dreamweaver
Version 2**

Professional
Web Site Design
\$489



CORPORATE SOFTWARE

UNIT 1, 28 VICTORIA ST, SMITHFIELD NSW 2164
PO BOX 6168, WETHERILL PARK NSW 2164

**100%
AUSTRALIAN
OWNED**
Over 12 years in
operation

Best Prices & Service in Australia

MICROSOFT OFFICE 2000

Microsoft
Office
2000



\$50 CASHBACK

(Conditions Apply)

When you purchase the following
Office 2000 Products

After \$50 Cashback:

- Office 2000 Std. - Upgrade \$360
- Office 2000 Std. - New Install* \$485
- Office 2000 Pro. - Upgrade \$470
- Office 2000 Pro. - New Install* \$595
- Office 2000 Prem. - Upgrade \$570
- Office 2000 Prem. - New Install* \$695

* Upgrade bundle with competitive product
- limited stocks

OUR BIGGEST SELLERS



ABC
FlowCharter
Version 7

\$350

OmniPage
Pro V9
NEW VERSION

New Install
\$619.00
Upgrade \$219



PC
Anywhere

VERSION 9
Host &
Remote
\$193

MICROSOFT MILLENNIUM MADNESS

Office 97 Licences

**BUY 4
GET 1 FREE**

- Office 97 Std. - New Install* \$429
- Office 97 Pro - New Install* \$529

* Upgrade bundle with competitive product - FOR A LIMITED TIME ONLY



NOVEMBER PRICE BLITZ

VISO
Standard
2000

\$299.00
Upgrade \$169



VISO
Technical
Version 5

\$539.00 ea
(New Install)



Corel
WordPerfect
Office 2000
Standard

Upgrade **\$199**
New Install **\$369**



McAfee
Office2000

\$89.00
Also McAfee
VirusScan V4
\$40.00*

(*after \$30 cashback)



Norton
AntiVirus
2000

NEW V6
\$75.00



Norton
Utilities
2000

NEW V4.5
\$79.00



WinFax
Pro
VERSION 9

For Win95/NT
\$115.00
Upgrade for \$99



Adobe
PageMill

Version 3.0
RRP \$149
SPECIAL PRICE
\$120

FOCUS ON WINDOWS NT



Microsoft Windows NT
Server 4.0 +5 Clients
\$1150

- WinNT Server V4 +10 Clients \$1375
- WinNT Server V4 +25 Clients \$2050
- MS WinNT Client Licence \$47
- MS WinNT Client Lic 20 Pack \$900
- WinNT Server 4 Resource Kit \$241
- WinNT W/Station V4 New Inst. \$395
- WinNT W/Station V4 Upgrade \$235
- WinNT W/Station 4 Res. Kit \$111.35

SQL
Server
Version 7

\$2099
Upgrade
\$939



SPECIAL



Adobe
PhotoDeluxe
Version 2.0
SPECIAL PRICE
\$49

PLEASE NOTE:

- Delivery: Post \$10 or Courier \$14
- We Accept Bankcard Mastercard and VISA, but not AMEX or Others.
- Phone Fax and Mail Orders Welcomed
- Goods ordered in error incur a 15% restocking fee
- We Accept authorised returns for Credit within 10 days if goods are unopened and in saleable condition
- Moneyback Offers (if any) are the responsibility of the manufacturer. E & O E
- All Prices are Subject to Change Without Notice
- Images shown are for illustration purposes only

Corporate Software now open in
Queensland - Call 07 3303 8434

We GUARANTEE to beat any genuine competitor's price!!!

Phone (02) 9725 3700 • Fax (02) 9604 1983
VISIT OUR WEB SITE AT: **CORPSOFT.COM.AU**



Personal Computer marketplace

FOR ADVERTISING DETAILS PLEASE CALL NICHOLAS RIVIERE ON (02) 9282 8905 COMPUTER PRODUCT & SERVICES GUIDE

COMPANIES INSIDE

All Care Computers

Altima Computers

Asuscript

AVN

Database

Diskmax Technology

Ecom Computers

Everything Linux

Hammer Data Systems

Inkjet Bubblejet

Microstructure

Netcraft

New Reality Resources

Pelham

Performance Memory

Powersource

Programmer's Paradise

RabbitNet

Rite Price Computer Wholesale

Russ Walters

Stroudco

Techline Australia

T.E. Computers

Total Web Site Design

Unijet Refills

Upgrade Yourself Computers

VME

Zeta Systems



SUPERIOR PERFORMANCE

INKJET REFILLS

OUR INKS ALWAYS PRINT AS GOOD, IF NOT BETTER THAN THE ORIGINAL!

BLACK INKJET REFILL KITS FROM ONLY- \$29.90

BLACK KITS INCLUDE SUPERIOR, DENSE & SHARP BLACK INK!

DESCRIPTION (Kits Compatible with Printers listed below)

CANON BJ-30/BJC-70/BJC 90	No. of Refills	Kit Code
CANON BC-01/02 BJ-10E/20/BJC-200/BJC-210/210SP/240/255	80	21-BKL
CANON BJ-300/330	9	3-BKL
CANON BJC-600/810/820	7	4-BKL
CANON BJC-4000/4100/4200/4300/4550/5000/5500 BCI-21	16	5-BKL
CANON BJC-4000/4100/4200/4300/4550/5000/5500 BCI-20	45	19-BKL
HP Desk Jet 400/500 Series	9	18-BKL
HP Desk Jet 600/800/900 Series	8	8A-BKL
HP Desk Jet 700/850C/855C/870C/1000C Series	8	8B-BKL
HP Deskjet 300 Series & Olivetti JP's!	6	29-BKL
EPSON Stylus 400/800/800+/1000	8	7-BKL
EPSON Stylus Colour /PRO/XL	1	1-BKL
EPSON Stylus 820/colour little	2	2-BKL
EPSON Stylus Colour 200/300/400/500/600/800/850/1520	12	23-BKL
EPSON Stylus Colour 440/840/740	8	33A-BKL
IBM/LEXMARK 4078/1000/1020 Series	12	33B-BKL
IBM/LEXMARK 5000/7000 Series	6	35A-BKL
CANON, EPSON, HP Fluorescent & Photo Realistic Kites!	12	35B-BKL

BUY 3 GET 1 FREE

NEW INKIES

100% SATISFACTION GUARANTEE

PLEASE CALL

COLOUR INKJET REFILL KITS FROM ONLY- \$39.90

COLOUR KITS INCLUDE CYAN, MAGENTA & YELLOW INKS!

DESCRIPTION (Kits Compatible with Printers listed below)

CANON BJC-70/80	No. of Refills	Kit Code
CANON BJC-210/210SP/240/255	3x30	22-CLR
CANON BJC-600/810/820	3x12	25-CLR
CANON BJC-4000/4100/4200/4300/4550/5000/5500 BCI-21	3x8	10-CLR
HP Colour Desk Jet 300/400/500 Series & Olivetti	3x30	17-CLR
HP Colour Desk Jet 600C/800C/900C Series	3x12	14A-CLR
HP Desk Jet 850C/855C/870C/1000C Series	3x12	14B-CLR
HP Desk Jet 710/720/880 Series	3x3	30A-CLR
EPSON Stylus Colour /PRO/XL	3x3	30B-CLR
EPSON Stylus 820/colour little	3x4	16-CLR
EPSON Stylus Colour 200/300/400/500/600/800/850/1520	3x12	24-CLR
EPSON Stylus Colour 440/840/740	3x12	34A-CLR
IBM/LEXMARK 4078/1000/1020 Series	3x12	34B-CLR
IBM/LEXMARK 5000/7000 Series	3x8	38A-CLR
CANON, EPSON, HP Fluorescent & Photo Realistic Kites!	3x8	38B-CLR

12/Colour

PLEASE CALL

Australia's best range of high quality papers and media also available for immediate delivery!

USING NEW REALITY RESOURCES INKJET REFILL KITS WILL NOT VOID YOUR PRINTER'S WARRANTY. BEWARE OF INFERIOR COPIES, BUY THE "ORIGINAL" AUSTRALIAN REFILL KIT!



**REUSE
RECYCLE
REFILL**

AUSTRALIA WIDE FREECALL
1800 680 605

New Reality Resources Pty. Ltd.

Australia Wide FREECALL - 1800 680 605

OLD Phone - (07) 3245 2411 Fax - (07) 3245 2755

VIC Phone - (03) 9878 8288 Fax - (03) 9878 3933

All brand and product names are registered trademarks of their respective owners and used solely for descriptive purposes.

Bayside Business Park

Shop 1 / 70 Redland Bay Rd

Capalaba Q 4157

34B-CLR



FREE AUSTRALIA WIDE DELIVERY! SAME DAY DISPATCH!!
COD * MONEY ORDER * CHEQUE * MASTER * VISA * BANKCARD * AMEX ACCEPTED



WE BRING YOU THE TRUE SOUND !

AC-3 5.1 HOME THEATER



Suitable for all Audio Sources
Walkman, Cassette Player, CD-Player,
DVD-Player, Sound Card, CD-Rom, MPC...

D-560 Dolby SPECIFICATIONS

- Decoder:
 - Audio Input:
 - Analog: RCA x 2
 - Digital: Coaxial & Optical Fiber
 - LCD Display
 - Power, Function (Mode, Up/Test, Down/Mute, Enter) Controls
 - Remote Control Receiver
 - Dimensions: W180 x H60 x D132 mm
- Remote Controller
- 5.1 Home Theater Speaker:
 - Satellite & Surround & Center Speakers:
 - 5 watts RMS each
 - 3" full Range Speaker
 - 80Hz-20kHz Frequency Response
 - Dimensions: W130 x H90 x D85 mm
 - Subwoofer:
 - 6 1/2" Woofer 40 Watts RMS
 - 40Hz-120Hz L.F.E
 - Wood Cabinet
 - Dimensions: W150 x H260 x D241 mm
 - LED, Power, Volume, Bass Level Controls



61-2-9748 8600 Fax 61-2-9748 8611 Email: info@psu.com.au Web Site: www.psu.com.au www.poso.com.au

We have the right surround and amplified speaker for every need, every budget

#1 SOURCE FOR MEMORY / CPU / HARDWARE

SIMMS 30 PIN

4 MB 30 PIN SIMMS
PARITY- 60,70 NS
4 MB 30 PIN SIMM NON
PARITY- 60, 70 NS

SIMMS 72 PIN

EDO/ FPM/ PARITY
8/16/32/64/128 MB
SDRAM 168 PIN DIMMS
32/64/128/256 MB PC66
\$110/\$180/\$300/call
32/64/128/256 MB PC100
\$110/\$180/\$300/call
32/64/128/256 MB PC133
DECKPRO ALL MODELS
32/64/128/256 MB PC100
ECC
32/64/128/256 MB PC133
ECC
CALL FOR PRICES
Prices given are excluding
tax (8%2%)

APPLE MAC MEMORY

POWERMAC 5500, 6100,
7100, 7200, 7220, 7250
7500, 8100, 8600, 9600
UMAX, POWER CENTRE
PRO, POWER BASE
POWER TOWER / PRO
32 MB/64MB/128 MB

G3 BIEGE G3 BLUE G4

SERVERS
32 MB/64MB/128 MB/256
MB
POWERBOOK DUO 10, 230,
250, 270C, 280, 2300, 150
POWERBOOK 5300, 190,
3400
POWER BOOK 3400, G3
POWERBOOK G3, WALL
STREET, IMAC

ACER

ACER EXTRA 3000 SERIES

ACER EXTRA 1000 SERIES
ACERMATE 800 SERIES
ACER NOTE 300 SERIES
ACERNOTE 700, 900 SERIES
ACER POWER 400, 4000,
6000 SERIES
ACER EXTENSA 300, 500,
600, 700 SERIES
ACER TRAVEL MATE 300,
700 SERIES

COMPAQ

AERO ALL MODELS
ALPHA STATION ALL MODELS
ARMADA ALL MODELS
CONTURA ALL MODELS
DECKPRO ALL MODELS
LTE ALL MODELS
PRESARIO ALL MODELS

CISCO

1600, 2500, 2600 Series
3620, 3640 Series
4500, 4700 Series
CALL FOR MODELS NOT
LISTED

DELL

DIMENSION ALL MODELS
INSPIRON ALL MODELS
LATITUDE ALL MODELS
OMNIPLEX
OPTIPLEX

DIGITAL

ALPHA SERVER
ALPHA STATION
CELEBRIS
HINOTE ALL MODELS
PRIORIS
VENTURIS

FUJITSU

C-SERIES
E-SERIES
ERGO PRO

LIFE BOOK

GATEWAY

ALR ALL MODELS
COLOR BOOK ALL MODELS
G3 SERIES
G8 SERIES
GP SERIES
GP5 SERIES
GP6 SERIES
P5-60,80,100,120,133,166,
200
SOLO 2100, 2200, 2300,
3100,5100,9100

NEWLETT PACKARD

3000 SERIES
9000 SERIES
BRIO
OMNIBOOK
PAVILION
VECTRA

IBM

APTIVA
INTELLISTATION
NETFINITY
P3300 SERIES
THINK PAD
CALL FOR MODELS NOT
LISTED

NEC

DIRECTION
ALL MODELS
EXPRESS ALL MODELS
POWERMATE ALL MODELS
READY ALL MODELS
VERSA 2000,3000,6000
SERIES

SHARP

ALL MODELS
SILICON GRAPHICS
CHALLENGE
IRIS

TEXAS INSTRUMENTS

CALL FOR ALL MODELS

TOSHIBA

LIBRETTO ALL MODELS
PROTEGE ALL MODELS
SATELLITE ALL MODELS
TEGRA ALL MODELS
T-SERIES

PRINTER MEMORY

CANON
HEWLETT & PACKARD
KYOCERA
LEXMARK

MODEMS

AZTECU S8
BANKSIA 56K V90
DYNALINK 56K
NETCOM 56K
US-ROBOTICS USB

MONITORS

DAEWOO 15", 17", 19"
HITACHI 17", 21"
HITSUBISHI 17", 21"
VIEW SONIC 17", 19", 21"
SONY 17", 19", 21"

MOTHERBOARDS

ASUS BX, SOCKET 370, 7
OPEN BX, BX DUAL
ABIT GX, GX
INTEL BX, SOCKET 370

CPU S

AMD K6 III 400
AMD K6 III 450
AMD K6 III 500
ATHLON
INTEL P-200 MMX, 233
MMX
INTEL PIII 450, 500, 550,
600

CABLES

PRINTER CABLES
MODEM CABLES
NETWORKING CABLES
SCSI CABLES
USB CABLES

CDRW (SCSI & IDE) & CDROM

PLEXTOR 8x20
YAMAHA 4x4x16
PANASONIC 8x20
TEAC
CDROM
ADOPEN 40X, 48X
CREATIVE 40X, 48X

CDRW Media

KODAK BLANK MEDIA
RICOH BLANK MEDIA
SAMSUNG MEDIA

HARD DRIVES (IDE & SCSI)

SEAGATE
IBM
FUJITSU

CASES

MACASE ATX 250,300
WATTS
ADOPEN, ATX CASES
TELLAS BLUE CASES

NETWORKING PRODUCTS

(HUBS, SWITCHES,
NETWORKING CABLES

AND CARDS)

3COM
ALLIEDTECHNYSION
INTEL
NETGEAR
NETCOMM
SURECOM

SYSTEMS

PIII/450/64MB/6.4GB
HDD/15" MONITOR \$1550
CELERON 466/64MB/6.4
GB HDD/15" MONITOR
\$1300

HIGH END GRAPHICS
Systems
DUAL MOHERBOARD
INTEL Xeon PROCESSOR
32 MB OXYGEN GVX1
GRAPHICS CARD,
ADAPTEK
SCSI CARD ULTRA III, 21"
MONITOR, 9.1 GB SCSI

STORAGE

(DRIVES & DISKS)
ZIP DRIVES 100, 250 MB
JAZZ DRIVES 1GB, 2 GB
DAT TAPES 2,4,8,13,24,36
GB
QRB DRIVES 2.2 GB SCSI

Performance Memory & Peripherals

1, 109, Alexander Street, Crows Nest NSW 2065
Tel: 02-99064533, Fax: 02-99061871
e-mail: buy@performancememory.com.au
Visit us at: www.performancememory.com.au

IF Power Is What You Need! Powerful Notebooks.

SD RAM-168 PIN-10NS PC100 DIMM
32MB PC100 \$150, 64MB \$240, 128MB \$429
32MB-10NS \$144, 64MB \$165, 128MB \$425
CALL FPM & PARITY 72PIN SO DIMMS
72PIN 60NS EDO 16MB \$45, 32MB \$94, 64MB \$224
SIMM 30PIN 4MB-3CHIP \$29, PARITY CALL
CPU, MOTHER BOARDS, HARD DRIVES,
CD-ROM DRIVES, CD- WRITER, MODEMS SOUN
CARDS. VGA CARDS. NETWORK CARD

••Altima Super

Intel Pentium II Celeron 400 MHz, 14.1in TFT, 6.4GB HDD, 64MB RAM, 24xCD-ROM, Floppy drive built-in, 4Mb ATI Rage Pro Graphics card, 2xAGP support, Carry Bag, Windows 98 Cd, PC-Cillin Antivirus. 1 year warranty. \$3650.

*Palm V PDA S8

Palm IIIx PDA S695.

* Toshiba, IBM, Compaq notebooks at unbeatable prices. Great savings to be made.

(International web site: WWW.ALTIMA.COM)

(Australian Web site: WWW.ALTIMACO.COM.AU)

- All notebook a

Tel: (02) 9755 7835 Fax: (02) 9755 7917

Internet Shop: www.altimaco.com.au

Altima Computers Pty Ltd, Unit 4, 48 Park Road, Cabramatta, NSW 2166.

[illegible]

Prices (inc. tax) as 27/9/99.

RITE PRICE COMPUTERS PTY LTD

PO BOX 539 OR 13 BILLSON ST, WONTHAGGI VIC 399

PHONE (03) 5672 4887 OR FAX (03) 5672 4410 A.C.N. 072 721 192

[illegible]

WE WILL NOT BE BEATEN ON PRICE OR QUALITY - ALWAYS RING FOR LATEST PRICING

PAYMENT TERMS STRICTLY CDD, CASH, CASH DIRECT DEPOSIT OR (BANKCARD, MASTERCARD OR VISA @ 2.5% POSTAGE & HANDLING CHARGE)

1 YEAR (12 MONTHS) RTB WARRANTY ON ALL PARTS PRICES SUBJECT TO CHANGE WITHOUT NOTICE

**FULL
PRICE
LIST!**

Available from
our web site

STORAGE SALE!

Phone: (02) 8850 2133 Fax: (02) 8850 2355 paradise@zip.com.au

www.programmersparadise.com.au



Ultra IDE hard drives

ex tax / inc tax

Quantum Fireball 6.4GB, 512kb, 9ms	\$162 / \$ 194
IBM Deskstar GXP 9.1GB, 2MB cache	\$215 / \$ 256
Quantum Fireball+KA 13GB, 512kb, 8ms	\$265 / \$ 315
Seagate 28.5GB Barracuda ATA, 8ms	\$439 / \$ 523
IBM 37.5GB, 2MB cache, 8ms, 5400rpm	\$598 / \$ 711

Ultra-2 Wide SCSI

ex tax / inc tax

Seagate 4.5GB, 512kb, 10ms, 7200rpm	\$ 323 / \$ 384
IBM UltraStar 9.1GB, 7ms, 2MB buffer	\$ 495 / \$ 589
Seagate 9.1GB, 7ms, Barracuda, 1MB cache	\$ 539 / \$ 642
Quantum 18.2GB, 5ms, 2MB buffer	\$1199 / \$1432
Seagate 36.4GB, 7ms, Barracuda, 1MB cache	\$1229 / \$1459

DVD, CDR & CDRW

ex tax / inc tax

Panasonic CW7502B SCSI - 8x/4x drive	\$325 / \$ 387
Hitachi - ATAPI 6x DVD drive	\$135 / \$ 159
Hewlett-Packard SureStore Plus - CDRW	\$478 / \$ 556
Yamaha CRW6416s SCSI kit - CDRW	\$458 / \$ 529
Blank CD's - Kodak, TDK, Verbatim, Sony	from \$1.95 each

Removable Media

ex tax / inc tax

Iomega Parallel Port 100MB Zip drive	\$ 165 / \$ 188
Iomega Parallel Port 250MB Zip drive	\$ 265 / \$ 299
LS-120 1.44/120MB Super Floppy drive	\$ 125 / \$ 148
Sony DDS-2 8-16GB Internal DAT drive	\$ 999 / \$1189
Seagate 96GB Autoload DAT drive	\$3623 / \$4310



All products sourced from the Australian Manufacturers. Overnight delivery \$10.
Bankcard/MasterCard/Visa/America - Covidia Corporate orders welcome
Prices updated daily. Call for best price! Programmer's Paradise Pty Ltd
A.C.N. 071 038 636 E&OE. Subject to change without notice. 28/10/99



NEW NEW NEW NEW NEW NEW NEW

Dragon NaturallySpeaking

VERSION 4.0

**the new version of Dragon NaturallySpeaking boasts
improved accuracy and reduced training**

**Now available in Australia from Auscript Pty Ltd
your Voice Recognition solution specialists
Bringing People & Technology together**



**For further information about our Voice Recognition solutions,
call us anywhere in Australia**

SYDNEY (02) 9238 6500
BRISBANE (07) 3229 5957
TASMANIA (03) 6220 4782

MELBOURNE (03) 9672 5617
ADELAIDE (08) 8205 4369
PERTH (08) 9325 6029

CANBERRA (02) 6249 7322
DARWIN (08) 8981 6130
TOWNSVILLE (07) 4772 5748

AUSCRIPT PTY LTD ACN 082 664 220

www.auscript.com.au voicerec@auscript.com.au

MEMORY * MEMORY * MEMORY

MANUFACTURERS/MODELS/SIZES	\$
Acer - 7100X, 310	64mb 354
Apple - i386/486	128mb 400
Compaq - Arm 1300	64mb 200
Dell - Lat. CPI A	64mb 400
Gateway - 2300, 9100	32mb 205
HP - Laser 4000	32mb 205
HP - Laser 2100	32mb 115
IBM - PC300GL	64mb 272
IBM - PC 386, 5160, 5200	64mb 272
IBM - Thinkpad 355X, X0	32mb 141
NEC - Versa L, 4000	32mb 205
NEC - Versa LX, 55X	64mb 480
Toshiba - 4000C35, 4000C27	32mb 250
Toshiba - 3100C37, 3250C35	64mb 283
Toshiba - 4000C37	64mb 216



PELHAM Pty Ltd

Prices exclude sales tax.
Overnight delivery \$15. Credit cards welcome.
Prices subject to change. Prices valid as at 21/10/99.
Ph: (02) 9223 2373 Fax: (02) 9223 5779
E-mail: pelham@pelham.com.au
1788 Yarrara Rd.
Parramatta NSW 2150

Software for Sale

Software for your Small Business

- * All Programs are Year 2000 Compliant
- * All Programs are GST Ready
- * All Programs are Shareware
- * All Programs are Easy to Use

Download from my Web Page
www.interworx.com.au/users/rosswalters

Ross Walters
Small Business Programmer
(07) 4151 2275 (After Hours Only)

Flexo-Wrap

computer cable tidy kits are



- Affordable
- Expandable
- Flexible
- Re-Usable
- 2, 5, 10 metre cable packs
- Customise lengths available
- Organise & protect cables
- Ideal for Networks
- Visit our website
- Dealers welcome
- Specialists in cable management

TECHFLEX AUSTRALIA

Tel: (02) 9709 2445 www.techflex.australia.com.au
Unit 3, 7 Robert Rd Greencare NSW 2190

TEG Christmas Savings

Shop 3H, 20-26 O'Connell St, Sydney 2000
Tel: 9223-2373 Fax: 02 9223-5779

Email: tegcom@ol.com.au
www.tegcom.com.au

Colonial Centre, Ground Floor
16-32 Elizabeth St, Martin Place 2000
Tel: 9223-2360 Fax: 92235775

TEG HOME

Bx Pro Mainboard
32MB PC100 SDRAM
4.3GB IDE HD
8MB 3D AGP II
PCI 3D Sound
1.44MB FDD
40X Mitsubishi CDROM
15" Videomax Monitor
120W Speakers
Minitower Case
Mouse & Acer Win98 Key.
MS Windows 98 on CD
Free Int. 56K V.90 Modem
C400A \$1199 C466A \$1290
C433A \$1240 C500A \$1399

TEG BUSINESS

Aopen AX68C Mainboard
64MB PC100 SDRAM
6.4GB IDE HD
8MB S1S AGP
PCI 3D Sound
1.44MB FDD
40X Mitsubishi CDROM
15" Videomax Monitor
120W Speakers
ATX Meditower Case
Mouse & Acer Win98 Key.
MS Windows 98 on CD
C466A \$1530
C500A \$1630
PII450 \$1760

TEG ENTHUSIAST

Aopen AX68C Mainboard
64MB PC100 SDRAM
8.4GB IDE Hard Drive
32MB Riva TNT2 AGP
Sound Blaster Live OEM
1.44MB FDD
50X Mitsubishi CD-ROM
17" Mitsubishi 1772ie Monitor
480W Speakers
ATX Meditower Case
Microsoft IntelliMouse
Honeywell Spacemate Key.
MS Windows 98 on CD
PII 450 \$2160 PIII 550 \$2590
PIII500 \$2270 PIII600 \$2940

TEG Y2K

Cyrix MII 333 CPU
Gigabyte SAA Mainboard
32MB SDRAM PC100
6.4GB IDE Hard Drive
MiniTower Case
free labour \$560
Celeron 400A CPU
BX-pro Motherboard
8MB AGP, PCI sound
Int. 56k modem
32MB SDRAM PC100
6.4GB IDE Hard Drive
Minitower Case
free labour \$630



TNT2

32MB Riva TNT2 AGP VideoCard
\$190



6x IDE DVD-ROM Drive
\$199



6.4GB IDE Hard Drive
\$199



Sound Blaster Live 128 PCI
\$55



17" Monitor
(three years onsite warranty)
\$420



Samsung ML5000A Printer
8ppm, 600dpi
\$549



20x4x4 Rewritable CDRW
\$350



Canon BJC265
Colour Bubblejet Printer
\$135



Acer V90 56K
external modem
\$110




Compaq Armada 1500
(C366, 32MB, 4GB, 24X, 12.1" CSTN, win95) **\$2140**
Toshiba Satellite 2540CDS
(AMD K6-2 333, 32MB, 4GB, 24X, 13" DSTN, win95/98) **\$2269**



IBM I Series
(Celeron 366, 32MB, 4.8GB, 12.1" TFT, 24X, 56K, Win98) **\$2790**
Acer TravelMate 511T
(Celeron 333, 64MB, 4.3GB, 12.1" TFT, 24X, 56K, Win98) **\$2910**

EverythingLinux.com.au



Choose from our huge range of

- Linux Distributions, BSD, BeOS
- Merchandising, T-Shirts & Games
- Software & Technical Books

See our full online catalogue at
<http://everythinglinux.com.au>
 ph: (02) 9798 7064
 fax: (02) 9798 2854

Give the Gift of Linux this Christmas!

OREILLY LINUX

FLASH MEMORY

SanDisk

CompactFlash

96MB	\$544
80MB	\$455
64MB	\$364
48MB	\$253
32MB	\$182
16MB	\$111
10MB	\$88
USB Reader	\$135
Parallel Reader	\$135
PCMCIA Adapter	\$22

PCMCIA Flash

220MB	\$1,216
173MB	\$962
110MB	\$689
85MB	\$481
40MB	\$290
32MB	\$208
20MB	\$191
16MB	\$137
Enquire for sizes up to 440MB	

2.5 & 3.5" IDE Drives

40MB	\$290
173MB	\$1,216
Enquire for sizes up to 440MB	

VME SYSTEMS
 Phone: (03) 9880 5811
 Fax: (03) 9880 5833
 e-mail: info@vme.com.au
 www.vme.com.au

INKJET CARTRIDGE REFILLS

Cut your inkjet printing costs by up to 80%

Black KITS FROM \$25.90 **Colour KITS FROM \$35.90**

We guarantee to have the best cartridge refill kits available on the market including waterproof, neon and photographic inks, that are imported from America

Printer

HP Deskjet 400, 500C, 510, 820, 530, 540, 550, 580
 HP Deskjet 600, 650, 950, 950i, 654 (ink not same as 500's)
 HP Deskjet 720, 722, 870, 880, 890, 893
 HP Deskjet 850, 855 (colours not same as 700/720)
 HP Deskjet 1800
 HP Deskjet 1200
 HP Deskjet, Deskwriter, Portable, Designjet, 300, 320
 HP PHOTOMART Star & Moon combined
 Canon BJ-30, BJ-C-70, BJ-C-80
 Canon BC-01, BC-02, BJ-C-210
 Canon BC-03, BC-3X (fax) BJ-C-210sp, BJ-C-255sp
 Canon BC-06 photo
 Canon BJ-300, 330
 Canon BJ-600, 610, 820
 Canon BJ-600, 620, 880
 Canon BJ-4000, 4100, 4200, 4300, 4550, 5000, 5500 BJ-C-21
 Canon BJ-4000, 4100, 4200, 4300, 4550, 5000, 5500 BC-20
 Canon BJ-5000i 5500i / 6000 BC-23
 Canon BJ-7000, 7100 BC-60 BC-81
 Canon BJ-7000, 7100 photo BC-62
 Epson Stylus Color 600 / 1520
 Epson Stylus Color 200 / 820 Color 11 / 11s
 Epson Stylus Color 400 / 800 / 1000
 Epson Stylus Color Pro / XL
 Epson Stylus Color 400 / 800
 Epson Stylus Color 500 Not the same ink as the 400 / 600
 Epson Stylus Photo / Photo RX / photo 700
 Epson Stylus Color 3000 / 5000
 Epson Stylus Color 440 / 840 Not the same ink as 400/600
 Epson Stylus Color 740 (900 & 1200 available)
 Epson Stylus Color 300 (four colour cartridge)
 Lexmark/IBM 4078/1020/2030/2050/2070/1000
 Lexmark/IBM 2030 / 2050 waterproof
 Lexmark/IBM 2030 / 2050 photo
 Lexmark/IBM 5000, 5700, 7000, 7000i (photo available)
 Olivetti JP150/170/192/250/350/360/450/3100

CARTRIDGE CLEANING KITS \$19.90

Special offer
 BUY A MIX OF ANY
 3 AND GET THE
 FOURTH FREE

CUT YOUR PRINTING
 COST \$ BY UP TO 80%
IT'S CHILD'S PLAY

Proudly supplying
 schools all over
 AUSTRALIA

Up to 60 refills per kit

Canon BCI-21 Black \$ 8.00*
 Canon BCI-21C \$ 14.00*
 Canon BJC-600 Black \$ 7.00*
 Canon BJC-600 Colour \$ 7.00*
 Canon BJC-800 Black \$ 13.00*
 Canon BJC-800 Colour \$ 13.00*
 Canon BJC-70 Black x3 \$ 13.00*
 Canon BJC-80 Black x3 \$ 13.00*
 Canon BJC-80 Colour x3 \$ 20.00*

Epson EPS S202034 \$13.00*
 Epson EPS S202047 \$13.00*
 Epson EPS S202093 \$15.00*
 Epson EPS S202025 \$12.00*
 Epson EPS S2020106 \$15.00*
 Epson EPS S202062 \$24.00*
 Epson EPS S202036 \$22.00*
 Epson EPS S202049 \$22.00*
 Epson EPS S202097 \$22.00*
 Epson EPS S202089 \$20.00*
 Epson EPS S202110 \$27.00*
 Epson EPS S202118 \$36.00*
 Epson EPS S202187 \$36.00*
 Epson EPS S202188 \$17.00*
 Olivetti JP150 - 350 X2 \$17.00*

FREE CALL 1800 809047 FREE DELIVERY AUSTRALIA WIDE

VISA - MASTERCARD - BANKCARD - C.O.D. CHEQUE

Easy REFILLS

Resellers wanted - Buy direct from the MANUFACTURER

Phone 07 3824 7800 Fax 07 3824 7799

EMAIL: refills@primus.com.au

P.O. Box 1042, Capalaba, Qld. 4157

2 Iona Court, Alexandra Hills, Qld. 4161

WE DO NOT SUBSTITUTE OUR INK OR QUALITY

APC DECEMBER 1999 PAGE 193



AB-CD
CD-ROM Business Cards

Ph. +61 2 9808 6820
Fax. +61 2 9808 6825
www.abcd.goplace.com



AB-CD
CD-ROM Business Cards

AB-CD
CD-ROM Business Cards

AB-CD
CD-ROM Business Cards

AVS Web Hosting Services

Standard Plan

- www.yourname.com.au
- 350 Mb of Webspace
- 8 Gb of traffic/month
- Control Panel
- Graphical Statistics
- CGI-Bin/MS Frontpage
- Real Media G2 6.0
- Java Chatroom
- Unlimited Email Aliases
- Unlimited Email Redirects
- Plus more

Host your web site on our high speed network and just look at all the features you get!

FROM
\$33.95
per month

Reseller Program Available

Contact AVS Network
(02) 4283 1582
<http://www.avs.net.au>

TOTAL Web Site Design

- Web sites designed & maintained
- Electronic Business Cards
- Multimedia CD-ROM presentations
- Shockwave animated web sites
- Video & audio streaming
- Secure E-commerce

All our CD-ROM's and EBC's have one click links direct to your web site to avoid errors typing long web and email addresses

(02) 9261-1889

www.ozemail.com.au/~twsd

UYC Computers Pty Ltd. ACN 074 408 245 trading as

UPGRADE YOURSELF COMPUTERS

Ph: 02 9982 9939 • Fax 02 9905 9530 • Email sales@uyc.com.au

Visit our Website for Latest Prices and Weekly Internet Specials www.uyc.com.au

3 South Creek Road, DEE WHY NSW 2099

Open for friendly service and free advice 7 days a week

Monday - Friday 9am - 5pm, Saturday 9am - 2pm & Sunday 9am - 12pm

We can deliver throughout Australia.

We accept Cheque, Credit Card, Direct Debit and COD Postage.

MOTHERBOARDS - 2 Year Warranty

Totem Super Socket 7 USB	\$150
Totem Pentium III BX	\$210
Microstar Slot A for Athlon CPU	\$330

Turbo charge your PC with an UPGRADE KIT - Includes Motherboard & CPU, 32MB SDRAM, AMD AGP Video

IBM 686 M2 (P300 MMX)	\$434
AMD K6-2 350 Mhz	\$478
AMD K6-2 400 Mhz	\$496
AMD K6-2 450 Mhz	\$522
AMD K6-3 450 Mhz	\$632
Make 64MB SDRAM ADD	\$96
Make 128MB SDRAM ADD	\$268

CPU and MOTHERBOARD SETUP and TESTED - 2 Year Warranty

AMD K6-2 350 Mhz	\$274
AMD K6-2 400 Mhz	\$293
AMD K6-2 450 Mhz	\$318
AMD K6-3 450 Mhz	\$505
IBM 686 M2 (P300 MMX)	\$231
Pentium III 450 MMX BX	\$686
Pentium III 550 MMX BX	\$792
Pentium III 600 MMX BX	\$1009
AMD Athlon K7-500	\$1238
AMD Athlon K7-500	\$813
AMD Athlon K7-600	\$1002
AMD Athlon K7-600	\$1310
AMD Athlon K7-650	\$1607

MEMORY - 2 Year Warranty

32Mb SDRAM PC100	\$142
64Mb SDRAM PC100	\$223
128Mb SDRAM PC100	\$400
256Mb SDRAM PC100	\$1047

NETWORK CARDS

PCI Combo 10/100	\$50
PCI 100Mbps	\$105
8 Port Hub	\$100

CASES

Desktop AT	\$68
Mini Tower AT	\$52
Mid Tower AT	\$75
Full Tower AT	\$124
Mid Tower ATX	\$95
Full Tower ATX	\$250

MONITORS - 3 Year On Site Warranty

15" KTX 0.28dpi	\$275
17" KTX 0.28dpi	\$440
15" Samsung	\$328
17" Samsung	\$514
17" Samsung Synchmaster	\$593
19" Samsung Synchmaster	\$1160
21" Samsung Synchmaster	\$2338

SEAGATE HARD DRIVES

3 Year Warranty - Ultra 66	
4.3Gb Ultra ATA	\$213
6.4Gb Ultra ATA	\$248
10.2Gb Ultra ATA	\$265
13.2Gb Ultra ATA	\$278
17.2Gb Ultra ATA	\$311
20.4Gb Ultra ATA	\$396
28.0Gb Ultra ATA	\$590
IBM 34.2Gb Ultra ATA	\$667
Hard Drive Mounting Kit	\$6
Removable Hard Drive Kit	\$35
External Hard Drive IDE box	\$195

MODEMS - 5 Year Warranty

Dynalink 56k Internal PCI	\$99
Dynalink 56k External ISA	\$130
Dynalink 56k External ISA	\$150
Dynalink PCMCIA 56k	\$175

SOUNDCARDS

ESS ISA 1869	\$35
ESS PCI 1938	\$34
Soundblaster 64 PCI	\$73
Vibra 128	\$63
Soundblaster Live 128	\$132

2nd HAND SUPERMARKET

USED COMPONENTS

30 Day Warranty on all goods

CPU Upgrades

486 DX2/66 Overdrive	\$25
486 DX4/100 Overdrive	\$50
Hypertrac 586/133 CPU for 486	\$55
Intel Pentium 166 Non MMX	\$119
Intel Pentium 200 MMX	\$135
Intel Pentium 233 MMX	\$150
Pentium Pro 200 256k	\$125

Drives

1.2Mb Floppy Drive	\$7
1.44Mb Floppy Drive	\$12
210Mb Hard Drive	\$50
420Mb Hard Drive	\$65
1.7Gb Hard Drive	\$119
8 Speed CDROM IDE	\$59

Memory

1Mb 30pin	\$1
4Mb 30pin	\$15
4Mb 72pin	\$10
8Mb 72pin	\$25
16Mb 72pin Fast Page NP	\$50
16Mb 72pin EDO	\$50

Motherboards

486 DX	\$25
Pentium Non MMX	\$65
Pentium MMX	\$100
Pentium Pro	\$65

Monitors

14" SVGA	\$89
15" SVGA	\$139

Cards

ISA/VLB I/O Card	\$5
ISA/VLB 1Mb Video Card	\$15
ISA Network Cards	\$5

MONTHLY SPECIAL

Pentium Pro 200 Motherboard and CPU \$210

UPGRADE YOURSELF COMPUTERS

* Prices subject to change without notice

100% PRINTER COMPATIBLE GUARANTEED



INKJET BUBBLEJET

REFILL SERVICES & INKJET KITS

BLACK REFILL KITS COMING ONLY \$10

DESCRIPTION	CARTRIDGE	No. in kit	CODE
Canon B&I 3070	BCI-1011	5/40	3088
Canon/Apple 600 Series	BCI-0102	3	2788
Canon 216SP	8030/8903	3	2788
Canon B&I 200/230	B&I-450	2	2888
Canon B&I 600 Series	B&I-201	6	2588
Canon/Apple B&I-4000/5500	BCI-210	15	0988
Canon/Apple B&I-4000/5500	BC-20	3	0488
HP Deskjet 7000 & Optimiser	BC-60	2	5088
HP Deskjet 400/500 Series	51825A/25M	2/3	1888
HP Deskjet 800 Series	51825A	2	1488
HP Deskjet 800 Series/1600	51845A	2	1288
Epson Stylus 400/800/1000 (1st ml.)	5020025	6	2388
Epson Stylus Colour/Pro/XXL	502034/82	4/2	2288
Epson Stylus Colour 800/1111/15	502034/82	4	2088
Epson Stylus Colour 400/500/600	5020083	6	1888
Epson Stylus Colour 800/1500	5020108	4	1888
IBM 4076 Lexmark 1000/1020/2070 Black	C400	3	0588
Xerox 4004 C-ITDCH	C400	3	4988

COLOUR REFILL KITS ONLY \$35

INCLUDES SOME OF EACH COLOUR

DESCRIPTION	CARTRIDGE	No. in kit	CODE
Canon/Apple 210/240	BC-65	3/10	100X
Canon B&I 600 Series	BCI-201	3/10	240X
Canon/Apple B&I-4000/5500 Series	BCI-210	3/30	080X
Canon B&I 7000	BCI-451	3/4	510X
HP Deskjet 400/500 Series	51825A	3/10	150X
HP Deskjet 800 Series	51845A	3/10	130X
HP Deskjet 800 Series/1600	51841A	3/6	110X
Epson Stylus 200/500	5020087	3/10	190X
Epson Stylus Colour/Pro/XXL	502036/66	3/4/2	210X
Epson Stylus 800/1111/15	5020089	3/10	190X
Epson Stylus 400/500/600/800/1000	5020089	10/10	170X
IBM 4076 Lexmark 1000/1020/2070 Colour	3/6	340X	

INKJET BUBBLEJET Co.

PO Box 1472 Maroubra NSW 2035

Tel: (02) 9362 4348

Fax: (02) 9363 3458

FOR MORE PRODUCTS

TONER CARTRIDGES
INKJET CARTRIDGES
INKJET MEDIA



www.speednet.com.au
Get on the Net Fast & Easy
(02) 9570 9900 (02) 9577 9977

www.inkjetbubblejet.com.au

www.databyte.com.au



Low prices
Secure on-line ordering
Over 15,000 products
Over 135 Manufacturers
Quick delivery to your door

Email: sales@databyte.com.au



with NetCraft Australia
Linux specialists since 1995

For the very best in Linux
software applications books
fun stuff games support
training



Sales - FREECALL 1800 4 LINUX
(1800 454 689)

Support - 08 8370 3650

Fax - 08 8278 8325

Email - sales@netcraft.com.au

URL - www.netcraft.com.au/linux

Resellers welcome

Duplication

Superfast turnaround

CD-ROM

Professional CD-R services

New low prices

50 copies @ \$4.00 each

100 copies @ \$5.00 each

250 copies @ \$4.00 each

500 copies @ \$3.50 each

Includes CD printing!

Next day delivery!

Custom printing on blank CD-R
single colour 100 discs @ \$3.50

DISKETTE

Fast turnaround -
Same day / next day delivery

Highest grade media

Label printing and labeling

Call us today for best quote

Visit our web site
for latest prices

DISKMAX TECHNOLOGY

(02) 9699 3333

www.diskmax.com.au

COMPUTER • REPAIR •

- * Quality computer repairs on all PC's at a reasonable fee and with a fast turn around.
- * Computer Engineer with 20 years of experience is in charge of all works.
- * Reliable & economical upgrades for business users.
- * We have all the answers to your problems (free quote).
- * Clean room facility for hard disc drive repairs (\$90).
- * Hard disc data recovery services (\$30/hr).
- * Computer hardware design and manufacturing by former USA design engineer.
- * All colour monitors repaired (\$90).
- * We have been in business at this address since 1984.

EASY PARKING, OPEN 5 DAYS (9.30 am. - 6pm.)

HANTON DATA SERVICES (HDS)
246 Victoria Road, Gladstone NSW 2111
Tel: (02) 9816 3879 Fax: (02) 9816 3784

www.stroudco.com

Want to Save 95% on printing
Fix common printing problems
Free delivery

Fast Service and same day despatch
Free Inkjet Refills secrets with order
Fully qualified support team

BULK INK AVAILABLE

BLACK REFILLS from only \$25.00

PRINTER	NO. OF FILLS KIT	NO. OF FILLS KIT
CANON BIC 6000	6	C19
CANON BIC 7000	12	C15
CANON BIC 7000	12	C15
HP DESKJET 400, 500 & 600 SERIES	7	H2H4
HP DESKJET 820C/850C/870C/1000C	6	H6
HP DESKJET 720/900/1000/1150	6	H13
HP DESKJET 1200 B, Y, C, M	6	H8
EPSON STYLUS COLOUR 750/900/1200	12	E4
EPSON STYLUS 400/800/1000	12	E1
EPSON STYLUS COLOUR / PRO / XL	6	E2
EPSON STYLUS 820 / COLOUR / 1111S/200	12	B4
EPSON COLOUR 400/500/600/700/800/900	12	E7
EPSON COLOUR 440/607/400/800/501/520	12	E7
EPSON STYLUS COLOUR 750/900/1200	12	E14
IBM 4076 LEXMARK	6	M1
OLIVETTI	8	H1
XEROX 4004C/ITDCH C1300	6	M3

COLOUR REFILLS from only \$35.00

PRINTER	NO. OF FILLS ON EACH COLOUR	KIT NO
CANON BIC 6000	4	C20
CANON BIC7000	60	C11
CANON BIC1010/1012/1014/1016/1018/1020/1022/1024/1026/1028/1030/1032/1034/1036/1038/1040/1042/1044/1046/1048/1050/1052/1054/1056/1058/1060/1062/1064/1066/1068/1070/1072/1074/1076/1078/1080/1082/1084/1086/1088/1090/1092/1094/1096/1098/1100/1102/1104/1106/1108/1110/1112/1114/1116/1118/1120/1122/1124/1126/1128/1130/1132/1134/1136/1138/1140/1142/1144/1146/1148/1150/1152/1154/1156/1158/1160/1162/1164/1166/1168/1170/1172/1174/1176/1178/1180/1182/1184/1186/1188/1190/1192/1194/1196/1198/1200/1202/1204/1206/1208/1210/1212/1214/1216/1218/1220/1222/1224/1226/1228/1230/1232/1234/1236/1238/1240/1242/1244/1246/1248/1250/1252/1254/1256/1258/1260/1262/1264/1266/1268/1270/1272/1274/1276/1278/1280/1282/1284/1286/1288/1290/1292/1294/1296/1298/1300/1302/1304/1306/1308/1310/1312/1314/1316/1318/1320/1322/1324/1326/1328/1330/1332/1334/1336/1338/1340/1342/1344/1346/1348/1350/1352/1354/1356/1358/1360/1362/1364/1366/1368/1370/1372/1374/1376/1378/1380/1382/1384/1386/1388/1390/1392/1394/1396/1398/1400/1402/1404/1406/1408/1410/1412/1414/1416/1418/1420/1422/1424/1426/1428/1430/1432/1434/1436/1438/1440/1442/1444/1446/1448/1450/1452/1454/1456/1458/1460/1462/1464/1466/1468/1470/1472/1474/1476/1478/1480/1482/1484/1486/1488/1490/1492/1494/1496/1498/1500/1502/1504/1506/1508/1510/1512/1514/1516/1518/1520/1522/1524/1526/1528/1530/1532/1534/1536/1538/1540/1542/1544/1546/1548/1550/1552/1554/1556/1558/1560/1562/1564/1566/1568/1570/1572/1574/1576/1578/1580/1582/1584/1586/1588/1590/1592/1594/1596/1598/1600/1602/1604/1606/1608/1610/1612/1614/1616/1618/1620/1622/1624/1626/1628/1630/1632/1634/1636/1638/1640/1642/1644/1646/1648/1650/1652/1654/1656/1658/1660/1662/1664/1666/1668/1670/1672/1674/1676/1678/1680/1682/1684/1686/1688/1690/1692/1694/1696/1698/1700/1702/1704/1706/1708/1710/1712/1714/1716/1718/1720/1722/1724/1726/1728/1730/1732/1734/1736/1738/1740/1742/1744/1746/1748/1750/1752/1754/1756/1758/1760/1762/1764/1766/1768/1770/1772/1774/1776/1778/1780/1782/1784/1786/1788/1790/1792/1794/1796/1798/1800/1802/1804/1806/1808/1810/1812/1814/1816/1818/1820/1822/1824/1826/1828/1830/1832/1834/1836/1838/1840/1842/1844/1846/1848/1850/1852/1854/1856/1858/1860/1862/1864/1866/1868/1870/1872/1874/1876/1878/1880/1882/1884/1886/1888/1890/1892/1894/1896/1898/1900/1902/1904/1906/1908/1910/1912/1914/1916/1918/1920/1922/1924/1926/1928/1930/1932/1934/1936/1938/1940/1942/1944/1946/1948/1950/1952/1954/1956/1958/1960/1962/1964/1966/1968/1970/1972/1974/1976/1978/1980/1982/1984/1986/1988/1990/1992/1994/1996/1998/2000/2002/2004/2006/2008/2010/2012/2014/2016/2018/2020/2022/2024/2026/2028/2030/2032/2034/2036/2038/2040/2042/2044/2046/2048/2050/2052/2054/2056/2058/2060/2062/2064/2066/2068/2070/2072/2074/2076/2078/2080/2082/2084/2086/2088/2090/2092/2094/2096/2098/2100/2102/2104/2106/2108/2110/2112/2114/2116/2118/2120/2122/2124/2126/2128/2130/2132/2134/2136/2138/2140/2142/2144/2146/2148/2150/2152/2154/2156/2158/2160/2162/2164/2166/2168/2170/2172/2174/2176/2178/2180/2182/2184/2186/2188/2190/2192/2194/2196/2198/2200/2202/2204/2206/2208/2210/2212/2214/2216/2218/2220/2222/2224/2226/2228/2230/2232/2234/2236/2238/2240/2242/2244/2246/2248/2250/2252/2254/2256/2258/2260/2262/2264/2266/2268/2270/2272/2274/2276/2278/2280/2282/2284/2286/2288/2290/2292/2294/2296/2298/2300/2302/2304/2306/2308/2310/2312/2314/2316/2318/2320/2322/2324/2326/2328/2330/2332/2334/2336/2338/2340/2342/2344/2346/2348/2350/2352/2354/2356/2358/2360/2362/2364/2366/2368/2370/2372/2374/2376/2378/2380/2382/2384/2386/2388/2390/2392/2394/2396/2398/2400/2402/2404/2406/2408/2410/2412/2414/2416/2418/2420/2422/2424/2426/2428/2430/2432/2434/2436/2438/2440/2442/2444/2446/2448/2450/2452/2454/2456/2458/2460/2462/2464/2466/2468/2470/2472/2474/2476/2478/2480/2482/2484/2486/2488/2490/2492/2494/2496/2498/2500/2502/2504/2506/2508/2510/2512/2514/2516/2518/2520/2522/2524/2526/2528/2530/2532/2534/2536/2538/2540/2542/2544/2546/2548/2550/2552/2554/2556/2558/2560/2562/2564/2566/2568/2570/2572/2574/2576/2578/2580/2582/2584/2586/2588/2590/2592/2594/2596/2598/2600/2602/2604/2606/2608/2610/2612/2614/2616/2618/2620/2622/2624/2626/2628/2630/2632/2634/2636/2638/2640/2642/2644/2646/2648/2650/2652/2654/2656/2658/2660/2662/2664/2666/2668/2670/2672/2674/2676/2678/2680/2682/2684/2686/2688/2690/2692/2694/2696/2698/2700/2702/2704/2706/2708/2710/2712/2714/2716/2718/2720/2722/2724/2726/2728/2730/2732/2734/2736/2738/2740/2742/2744/2746/2748/2750/2752/2754/2756/2758/2760/2762/2764/2766/2768/2770/2772/2774/2776/2778/2780/2782/2784/2786/2788/2790/2792/2794/2796/2798/2800/2802/2804/2806/2808/2810/2812/2814/2816/2818/2820/2822/2824/2826/2828/2830/2832/2834/2836/2838/2840/2842/2844/2846/2848/2850/2852/2854/2856/2858/2860/2862/2864/2866/2868/2870/2872/2874/2876/2878/2880/2882/2884/2886/2888/2890/2892/2894/2896/2898/2900/2902/2904/2906/2908/2910/2912/2914/2916/2918/2920/2922/2924/2926/2928/2930/2932/2934/2936/2938/2940/2942/2944/2946/2948/2950/2952/2954/2956/2958/2960/2962/2964/2966/2968/2970/2972/2974/2976/2978/2980/2982/2984/2986/2988/2990/2992/2994/2996/2998/3000/3002/3004/3006/3008/3010/3012/3014/3016/3018/3020/3022/3024/3026/3028/3030/3032/3034/3036/3038/3040/3042/3044/3046/3048/3050/3052/3054/3056/3058/3060/3062/3064/3066/3068/3070/3072/3074/3076/3078/3080/3082/3084/3086/3088/3090/3092/3094/3096/3098/3100/3102/3104/3106/3108/3110/3112/3114/3116/3118/3120/3122/3124/3126/3128/3130/3132/3134/3136/3138/3140/3142/3144/3146/3148/3150/3152/3154/3156/3158/3160/3162/3164/3166/3168/3170/3172/3174/3176/3178/3180/3182/3184/3186/3188/3190/3192/3194/3196/3198/3200/3202/3204/3206/3208/3210/3212/3214/3216/3218/3220/3222/3224/3226/3228/3230/3232/3234/3236/3238/3240/3242/3244/3246/3248/3250/3252/3254/3256/3258/3260/3262/3264/3266/3268/3270/3272/3274/3276/3278/3280/3282/3284/3286/3288/3290/3292/3294/3296/3298/3300/3302/3304/3306/3308/3310/3312/3314/3316/3318/3320/3322/3324/3326/3328/3330/3332/3334/3336/3338/3340/3342/3344/3346/3348/3350/3352/3354/3356/3358/3360/3362/3364/3366/3368/3370/3372/3374/3376/3378/3380/3382/3384/3386/3388/3390/3392/3394/3396/3398/3400/3402/3404/3406/3408/3410/3412/3414/3416/3418/3420/3422/3424/3426/3428/3430/3432/3434/3436/3438/3440/3442/3444/3446/3448/3450/3452/3454/3456/3458/3460/3462/3464/3466/3468/3470/3472/3474/3476/3478/3480/3482/3484/3486/3488/3490/3492/3494/3496/3498/3500/3502/3504/3506/3508/3510/3512/3514/3516/3518/3520/3522/3524/3526/3528/3530/3532/3534/3536/3538/3540/3542/3544/3546/3548/3550/3552/3554/3556/3558/3560/3562/3564/3566/3568/3570/3572/3574/3576/3578/3580/3582/3584/3586/3588/3590/3592/3594/3596/3598/3600/3602/3604/3606/3608/3610/3612/3614/3616/3618/3620/3622/3624/3626/3628/3630/3632/3634/3636/3638/3640/3642/3644/3646/3648/3650/3652/3654/3656/3658/3660/3662/3664/3666/3668/3670/3672/3674/3676/3678/3680/3682/3684/3686/3688/3690/3692/3694/3696/3698/3700/3702/3704/3706/3708/3710/3712/3714/3716/3718/3720/3722/3724/3726/3728/3730/3732/3734/3736/3738/3740/3742/3744/3746/3748/3750/3752/3754/3756/3758/3760/3762/3764/3766/3768/3770/3772/3774/3776/3778/3780/3782/3784/3786/3788/3790/3792/3794/3796/3798/3800/3802/3804/3806/3808/3810/3812/3814/3816/3818/3820/3822/3824/3826/3828/3830/3832/3834/3836/3838/3840/3842/3844/3846/3848/3850/3852/3854/3856/3858/3860/3862/3864/3866/3868/3870/3872/3874/3876/3878/3880/3882/3884/3886/3888/3890/3892/3894/3896/3898/3900/3902/3904/3906/3908/3910/3912/3914/3916/3918/3920/3922/3924/3926/3928/3930/3932/3934/3936/3938/3940/3942/3944/3946/3948/3950/3952/3954/3956/3958/3960/3962/3964/3966/3968/3970/3972/3974/3976/3978/3980/3982/3984/3986/3988/3990/3992/3994/3996/3998/4000/4002/4004/4006/4008/4010/4012/4014/4016/4018/4020/4022/4024/4026/4028/4030/4032/4034/4036/4038/4040/4042/4044/4046/4048/4050/4052/4054/4056/4058/4060/4062/4064/4066/4068/4070/4072/4074/4076/4078/4080/4082/4084/4086/4088/4090/4092/4094/4096/4098/4100/4102/4104/4106/4108/4110/4112/4114/4116/4118/4120/4122/4124/4126/4128/4130/4132/4134/4136/4138/4140/4142/4144/4146/4148/4150/4152/4154/4156/4158/4160/4162/4164/4166/4168/4170/4172/4174/4176/4178/4180/4182/4184/4186/4188/4190/4192/4194/4196/4198/4200/4202/4204/4206/4208/4210/4212/4214/4216/4218/4220/4222/4224/4226/4228/4230/4232/4234/4236/4238/4240/4242/4244/4246/4248/4250/4252/4254/4256/4258/4260/4262/4264/4266/4268/4270/4272/4274/4276/4278/4280/4282/4284/4286/4288/4290/4292/4294/4296/4298/4300/4302/4304/4306/4308/4310/4312/4314/4316/4318/4320/4322/4324/4326/4328/4330/4332/4334/4336/4338/4340/4342/4344/4346/4348/4350/4352/4354/4356/4358/4360/4362/4364/4366/4368/4370/4372/4374/4376/4378/4380/4382/4384/4386/4388/4390/4392/4394/4396/4398/4400/4402/4404/4406/4408/4410/4412/4414/4416/4418/4420/4422/4424/4426/4428/4430/4432/4434/4436/4438/4440/4442/4444/4446/4448/4450/4452/4454/4456/4458/4460/4462/4464/4466/4468/4470/4472/4474/4476/4478/4480/4482/4484/4486/4488/4490/4492/4494/4496/4498/4500/4502/4504/4506/4508/4510/4512/4514/4516/4518/4520/4522/4524/4526/4528/4530/4532/4534/4536/4538/4540/4542/4544/4546/4548/4550/4552/4554/4556/4558/4560/4562/4564/4566/4568/4570/4572/4574/4576/4578/4580/4582/4584/4586/4588/4590/4592/4594/4596/4598/4600/4602/4604/4606/4608/4610/4612/4614/4616/4618/4620/4622/4624/4626/4628/4630/4632/4634/4636/4638/4640/4642/4644/4646/4648/4650/4652/4654/4656/4658/4660/4662/4664/4666/4668/4670/4672/4674/4676/4678/4680/4682/4684/4686/4688/4690/4692/4694/4696/4698/4700/4702/4704/4706/4708/4710/4712/4714/4716/4718/4720/4722/4724/4726/4728/4730/4732/4734/4736/4738/4740/4742/4744/4746/4748/4750/4752/4754/4756/4758/4760/4762/4764/4766/4768/4770/4772/4774/4776/4778/4780/4782/4784/4786/4788/4790/4792/4794/4796/4798/4800/4802/4804/4806/4808/4810/4812/4814/4816/4818/4820/4822/4824/4826/4828/4830/4832/4834/4836/4838/4840/4842/4844/4846/4848/4850/4852/4854/4856/4858/4860/4862/4864/4866/4868/4870/4872/4874/4876/4878/4880/4882/4884/4886/4888/4890/4892/4894/4896/4898/4900/4902/4904/4906/4908/4910/4912/4914/4916/4918/4920/4922/4924/4926/4928/4930/4932/4934/4936/4938/4940/4942/4944/4946/4948/4950/4952/4954/4956/4958/4960/4962/4964/4966/4968/4970/4972/4974/4976/4978/4980/4982/4984/4986/4988/4990/4992/4994/4996/4998/5000/5002/5004/5006/5008/5010/5012/5014/5016/5018/5020/5022/5024/5026/5028/5030/5032/5034/5036/5038/5040/5042/5044/5046/5048/5050/5052/5054/5056/5058/5060/5062/5064/5066/5068/5070/5072/5074/5076/5078/5080/5082/5084/5086/5088/5090/5092/5094/5096/5098/5100/5102/5104/5106/5108/5110/5112/5114/5116/5118/5120/5122/5124/5126/5128/5130/5132/5134/5136/5138/5140/5142/5144/5146/5148/5150/5152/5154/5156/5158/5160/5162/5164/5166/5168/5170/5172/5174/5176/5178/5180/5182/5184/5186/5188/5190/5192/5194/5196/5198/5200/5202/5204/5206/5208/5210/5212/5214/5216/5218/5220/5222/5224/5226/5228/5230/5232/5234/5236/5238/5240/5242/5244/5246/5248/5250/5252/5254/5256/5258/5260/5262/5264/5266/5268/5270/5272/5274/5276/5278/5280/5282/5284/5286/5288/5290/5292/5294/5296/5298/5300/5302/5304/5306/5308/5310/5312/5314/5316/5318/5320/5322/5324/5326/5328/5330/5332/5334/5336/5338/5340/5342/5344/5346/5348/5350/5352/5354/5356/5358/5360/5362/5364/5366/5368/5370/5372/5374/5376/5378/5380/5382/5384/5386/5388/5390/5392/5394/5396/5398/5400/5402/5404/5406/5408/5410/5412/5414/5416/5418/5420/5422/5424/5426/5428/5430/5432/5434/5436/5438/5440/5442/5444/5446/5448/5450/5452/5454/5456/5458/5460/5462/5464/5466/5468/5470/5472/5474/5476/5478/5480/5482/5484/5486/5488/5490/5492/5494/5496/5498/5500/5502/5504/5506/5508/5510/5512/5514/5516/5518/5520/5522/5524/5526/5528/5530/5532/5534/5536/5538/5540/5542/5544/5546/5548/5550/5552/5554/5556/5558/5560/5562/5564/5566/5568/5570/5572/5574/5576/5578/5580/5582/5584/5586/5588/5590/5592/5594/5596/5598/5600/5602/5604/5606/5608/5610/5612/5614/5616/5618/5620/5622/5624/5626/5628/5630/5632/5634/5636/5638/5640/5642/5644/5646/5648/5650/5652/5654/5656/5658/5660/5662/5664/5666/5668/5670/5672/5674/5676/5678/5680/5682/5684/5686/5688/5690/5692/5694/5696/5698/5700/5702/5704/5706/5708/5710/5712/5714/5716/5718/5720/5722/5724/5726/5728/5730/5732/5734/5736/5738/5740/5742/5744/5746/5748/5750/5752/5754/5756/5758/5760/5762/5764/5766/5768/5770/5772/5774/5776/5778/5780/5782/5784/5786/5788/5790/5792/5794/5796/5798/5800/5802/5804/5806/5808/5810/5812/5814/5816/5818/5820/5822/5824/5826/5828/5830/5832/5834/5836/5838/5840/5842/5844/5846/5848/5850/5852/5854/5856/5858/5860/5862/5864/5866/5868/5870/5872/5874/5876/5878/5880/5882/5884/5886/5888/5890/5892/5894/5896/5898/5900/5902/5904/5906/5908/5910/5912/5914/5916/5918/592		

For a limited time
\$100/year or
\$9.99/mnth
6hrs/day, up
to 50hrs/mnth

**INTERNET
ACCESS 56k**
\$9.99/mth*

Ph: 03 9235 5800

Ph: 02 9383 9000

2pm->10pm, 7 days

Resellers Needed! *Conditions apply

http://www.rabbit.com.au E-mail: info@rabbit.com.au

RabbitNet

no speed limits



POWERMATE PIII600

Intel Pentium III 600MHz
Intel 440BX M/B
128 Mb SDRAM
17 Gb UDMA 66 HDD
32 Mb Riva TNT2 AGP
Sony 6x DVD ROM + s/w
Sound Blaster Live +
Digital Out
Juster 500w Subwoofer
Aopen KX45 ATX Case
1.44 Mb FDD
104 keyboard
MS IntelliMouse
56K Modem or 10/100 Lan
17" Mitsubishi Monitor
MS Windows 98 SE
McAfee Anti-Virus
Upgrade to 19" Leo \$349

POWERMATE AMD600

AMD Athlon 600MHz
MSI 6167 M/B 200MHz
Bus & UDMA 66 IDE II
128 Mb SDRAM
17 Gb UDMA 66 HDD
32 Mb Riva TNT2 AGP
Sony 6x DVD ROM + s/w
Sound Blaster Live +
Digital Out
Juster 500w Subwoofer
Aopen KX45 ATX Case
1.44 Mb FDD
104 keyboard
MS IntelliMouse
56K Modem or 10/100 Lan
17" Mitsubishi Monitor
MS Windows 98 SE
McAfee Anti-Virus

POWERMATE PIII500

Intel Pentium III 500MHz
Intel 440BX M/B
128 Mb SDRAM
Quantum CX 13Gb HDD
32 Mb Riva TNT2 AGP
48x CD-ROM
Creative Vibra128 Sound
Aopen 300w speakers
Aopen KX45 ATX Case
1.44 Mb FDD
104 Keyboard
MS IntelliMouse
56K Modem or 10/100 Lan
17" Leo or 15" Sony monitor
MS Windows 98 SE
McAfee Anti-Virus

EXPLORER PIII450

Intel Pentium III 450MHz
Intel 440BX M/B
64 Mb SDRAM
Seagate 10 Gb UDMA 66
16 Mb Creative TNT2 AGP
48x CD-ROM
Audio Excel 3D Sound
Aopen 300w speakers
Aopen KX45 ATX Case
1.44 Mb FDD
104 Keyboard
A4 Tech Mouse
56K Modem or 10/100 Lan
17" Leo or 15" Sony monitor
MS Windows 95/98
McAfee Anti-Virus

EXPLORER C500

Intel Celeron 500MHz
Intel 810 M/B UDMA 66
64 Mb SDRAM
6.4 Gb UDMA 66 HDD
4x Direct AGP Video
40x CD-ROM
Adi 3D Sound
120w speakers
ATX Case 250w
1.44 FDD
104 Keyboard
Mouse & Pad
56K Modem or 10/100 Lan
15" SVGA Monitor
Windows 95/98
Anti-Virus Software
Upgrade to PIII 450 + \$69

EXPLORER AMD400

AMD K6 II 400MHz 3DNow
\$S3 530 100MHz M/B
64 Mb SDRAM
6.4 Gb UDMA 66 HDD
4 Mb AGP Video
40x CD-ROM
Audio Excel 3D Sound
120w speakers
Mini Case 250w
1.44 Mb FDD
104 Keyboard
Mouse & Pad
56K Modem or 10/100 Lan
15" SVGA Monitor
Windows 95/98
Anti-Virus Software
Upgrade - Celeron 400 \$75

\$2999 \$2999 \$2299 \$1899 \$1499 \$1249

Call us for the best prices on

IDE & SCSI HDD - CD & CDRW - Video Cards - RAM - Scanners - Printers - Laptops



EcomComputers

Sydney CBD

Neutral Bay

Erina

33 York St Ph 92990022 Fx 92901173

4/120 Military Rd Ph 99044400 Fx 99040847

202 The Entrance Rd Ph 43670299 Fx 43670298

email: info@ecomcomputers.com.au

www.ecomcomputers.com.au

CD & Online

FOR ADVERTISING DETAILS PLEASE CALL NICHOLAS RIVIERE ON (02) 9282 8905 nriviere@acp.com.au

COMPANIES INSIDE

- Accsoft Internet
- CD Rom Service
- Lab Systems
- PC Service Centre
- Swann Communications

Clone your CD

Super fast duplicating & replicating service

- Premium recordable disks • Any quantity
- 100% verification • Unbeatable rates
- Same day duplicating service



CD ROM SERVICES

Tel: (02) 9954 9885
Shop 8.06, Northpoint, Nth Syd
www.cdroms.com.au

nero CD-RECORDING
BURNING ROM SOFTWARE ULTRAFAST, RELIABLE AND USER FRIENDLY

Supports all major SCSI + IDE CD-R + CD-RW recorders
IDE to SCSI, SCSI to IDE, IDE to IDE, SCSI to SCSI CD copy
Image CD copy or "On the fly" CD to CD copies
Variable pause length and Index setting for audio CD's
Digital audio extraction of multiple audio tracks
Familiar 95 Explorer Style drag and drop interface
Multi session, Track at once, Disc at Once, Bootable CD
Mixed Mode, HFS support, ISO/HFS Hybrid CD support.
Includes Multi Mounter Software for opening old sessions
Supports MS Operating systems Win95, Win98, NT4
New! Video CD creation make your own VCD's
New! MP3 decoding on the fly MP3 to Audio CD
New! "Power partition backup" -image your hard drive direct to C.D.R

Exclusive Distributor for Nero
www.labsystems.com.au Dealer enquiries welcome
e-mail derek@labsystems.com.au tel 03/9885 0888 fax 03/9885 6056

Version 4
m3
Master drives available
4x12 & 8x20
We ship Australia wide

Lab systems



SwannSmart

56K External Voice/Fax/Data Modem

Fast. Stable. Easy.

Also Available:

**PC USER
BEST BUY**

PCMCIA

Translucent

Internal

All modems feature V.90
and include 5 Year Warranty

...and this part's free.

The Ultimate Web Tutor

The SwannSmart 56K Modem and Home Win/Workalot Educational Toolkit gives internet novices all the answers to their questions, and offers a high speed, reliable and stylish modem at a very reasonable price. Visit your nearest Tandy, Myer, David Jones, Harvey Norman, Dick Smith, City Software, Teles Camera Store or call for stockists.

Call 1-8000-MODEM
or visit www.swann.com.au
Swann Communications Pty Ltd
Sydney Australia

Swann
COMMUNICATIONS
www.swann.com.au



Accsoft Internet Services

Providing Quality Internet Services Since 1995

Business
Fast, Reliable, Low Cost

BusinessTotalConnect

Permanent line: 24 hrs ISDN/Multi-modem
Office Saver: 12 hrs/day option
name@yourcompany.com.au
www.yourcompany.com.au

BusinessTotalWebSite

e-Commerce services
Web Site Hosting
Secure Server

<http://www.accsoft.com.au>

PLEASE CHECK OUR WEB SITE OR RING
FOR COVERAGE AND SERVICE DETAILS

Suite F1 Citymark Bldg, 683-689 George St, Sydney NSW 2000
Tel: (02) 9281 8163 Fax: (02) 9281 8621

Open 7 Days



Home, Small Office
56K/V.90 Speedy Access
6 e-mail Addresses per User
No Download Limit

Premium Access

Prepaid by hours, no use-by date
Frequent user bonus

Economical Pack

\$38/mth. Untimed
3 hrs/connection



Please see www.accsoft.com.au/y2k

IIDD Phone-to-Phone

Hong Kong 19 ¢ / min,
US, Canada, UK 25 ¢ / min

Access Points In

Sydney

Melbourne

Brisbane

Top grade upgrades.

Whether it's memory, hard disks, storage or printers - we're the PC upgrade specialists for many brands such as HP, IBM, DELL, Toshiba, Compaq, and Digital. And naturally, we'll install and repair too. We use quality parts and products from Compaq, Digital, IBM, Simple Memory, Seagate, Hypertech, Sony, Xircom, Creative Labs, Netcomm and Canon.

Call 1300 721 021, or visit www.pcservicentre.com for this week's specials.



Sydney, Melbourne, Adelaide, Brisbane, Alice Springs, Darwin, Newcastle.

Everything you need at everyday prices

COMPUTER SYSTEMS

Intel Celeron400 System\$1295
 Asus Me99-B Motherboard, 64Mb SDRAM, Seagate 8.4Gb Hd, 15" Monitor, 1.44Mb Fd, 8Mb AGP, Minitower Case, Keyboard & Mouse, 64x CD Rom, PCI 32 Audio, 120W Speakers
Upgrade to:
 Celeron433\$25
 Celeron466\$139

Intel Pentium III-450/500.....\$1469/1579
 Asus P55-B Motherboard, 64Mb SDRAM, Seagate 8.4Gb Hd, 1.44Mb Fd, 15" Monitor, 8Mb AGP, Display Card, ATX MidTower Case, PS/2 Keyboard & Mouse, 54x CD ROM, PCI 32 Sound Card, 120W Speakers.

PC upgrade kits:
 40X CD ROM+PCI Sound Card+120W Speakers\$110
 AMK K6II-400 CPU +Flo+M(B/AGP/Audio).....\$299
 Celeron 400 CPU +M(B/AGP/Audio)\$329

SPECIAL SYSTEM PACKAGE

AMD K6II-400.....\$1139
 Asus P55-B Super Socket 7 Motherboard, 64Mb SDRAM, Seagate 8.4Gb Hd, 1.44Mb Fd, 15" Monitor, 8Mb AGP, Minitower Case, Keyboard & Mouse 64X CD Rom, PCI32 Audio, 120W Speakers.
Upgrade to AMDK6II-450 ...\$35

Note: Prices listed are based on cash or bank cheque discount prices. Price and availability of stock subject to change without notice.

PROCESSORS

Intel Pentium II Celeron 400\$149
 Intel Pentium II Celeron 433\$165
 Intel Pentium II Celeron 466\$209
 Intel Pentium II Celeron 500\$315
 Intel Pentium III 450\$385
 Intel Pentium III 500\$505
 Intel Pentium III 550\$749
 Intel Pentium III 600\$999
 AMD K6II 400\$105
 AMD K6III 450\$135

MULTIMEDIA

64X CD Rom Drive\$79
 40X Asus/Mitsubishi CD Rom Drive\$79
 50X Mitsubishi CD Rom Drive\$99
 6X Pioneer DVD + Software\$190
 24X42 Sony CDRW IDE Drive\$369
 16X4X4 Yamaha CDRW Drive\$479
 Kodak Gold Blank Disk\$2.50
 Creative Vibra 128 Sound Card\$59
 Creative SB 512 Sound Card\$139
 Creative SB Live Value Sound Card\$139

PRINTERS

Kyocera Laser(600)\$599
 Panasonic Laser(6100)\$375
 HP Laserjet 1100\$789
 HP Laserjet 2100\$1399
 Epson Inkjet 440\$225
 Epson Inkjet 640\$289
 Canon BJC 4650(A3)\$425
 Canon BJC 2000\$179
 Canon BJC 7100\$490

MEMORY

16MB 72 Pin EDO\$79
 32MB 72 Pin EDO\$129
 100Mhz SDRAMCall

MONITORS

15" Hansol\$259
 15" Mitsubishi\$289
 17" Mitsubishi\$459
 17" Starview (25)\$449
 19" Mitsubishi\$1225

MODEMS

Aztech Internal 56K\$75
 Aztech External 56K\$99
 Aztech External 56K USB\$105
 Star External 56K USB\$99
 Mitsubishi Internal 56K\$89
 Mitsubishi External 56K\$129
 Diamond Internal 56K\$99
 Diamond External 56K\$149
 Netcom PCMCIA 56K\$285

NETWORKING

PCI 10 BaseT\$45
 D-Link PCI 10 BaseT\$55
 D-Link PCI 100 BaseT\$75
 3Com 10 BaseT\$150
 3Com 100 BaseT\$299
 Netgear 10/100 BaseT\$125
 Intel 100 Base T\$145
 Ethernet 9 Port Hub\$119
 Netgear 16 Port Hub\$275

MOTHERBOARDS

Asus P5A-B Soc. 7\$155
 Asus P5A-B Soc. 7(Audio)\$169
 Asus P55-B Soc. 7(AGP/Audio)\$179
 Asus Mel-M(370)\$165
 Asus Me99-B(370, AGP, Audio)\$179
 Asus Me99VM(370, AGP, Audio, ATX)\$179
 Asus P29-S(Stat 1)\$239
 Asus P3B-F(Stat 1)\$239
 Asus P2B-S(Stat 1, SCSI)\$589
 Asus P2B-F+VOODOO 3\$489

DISPLAY CARDS

4MB 3D AGP\$49
 BMB 1740 2D/3D AGP\$85
 16MB Diamond Viper 550 AGP\$225
 16MB Diamond Fusion\$179
 32MB Diamond Viper 770 AGP\$335
 32MB Asus Riva TNT\$225
 32MB Asus Riva TNT2\$325
 32MB Asus Riva TNT2 (TV/Video)\$389

HARD DISK DRIVES

Seagate 6.4GB IDE\$215
 Seagate 10.2GB IDE\$235
 Seagate 13GB IDE\$269
 Seagate 17GB IDE\$289
 Seagate 4.5GB SCSI\$365
 Seagate 6.5GB SCSI\$515
 Seagate 9.1GB SCSI\$555
 Seagate 18GB SCSI\$1299

QUEENSLAND

8/101 Newmarket Rd, Windsor Qld 4030
 Ph (07) 3357 9377
 Fax (07) 3357 9277

1993 Logan Rd, Upper Mt Gravatt Qld 4122
 Ph (07) 3849 8000
 Fax (07) 3849 1333

NEW SOUTH WALES

817 Princes Highway, Tempe NSW 2044
 Ph (02) 9558 9288
 Fax (02) 9558 9388

91 Bronte Rd, Bond Junction NSW 2022
 Ph (02) 9389 8255
 Fax (02) 9389 8393

VICTORIA

Ct & T
 149 Springvale Rd, Nunawading Vic 3163
 Ph (03) 9894 8466
 Fax (03) 9894 7781

388 Longsdale St, Mel. City Vic 3000
 Ph (03) 9670 9686
 Fax (03) 9670 9687

7 Station Rd, Malvern Vic 3144
 Ph (03) 9576 1488
 Fax (03) 9576 1430

Acer
 Adaptec
 ADI
 AMD
 A-Open
 APC
 A-plus
 Asus
 Aztech
 Banksia
 Canon
 Cisco
 Compaq
 Creative
 Cyrix
 Daewoo
 Diamond
 D-link
 EPSON

Fuji
 HP
 IBM
 Intel
 Iomega
 Kodak
 Microsoft
 Mitsubishi
 MYOB
 NEC
 NetComm
 Netgear
 OKI
 Pioneer
 S3
 SCO
 Seagate
 Sharp
 Sony
 SYMANTEC
 Tekrom
 Toshiba
 Umax
 Yamaha
 Xircom
 3com



Learn how to avoid Y2K problems, advertise online, use Lotus Notes and keep track of your finances.

Get the know-how

Y2K Bible: Procrastinator's Edition

Some might think 542 pages are a lot for a procrastinator to read, but we'll give this book the benefit of the doubt.

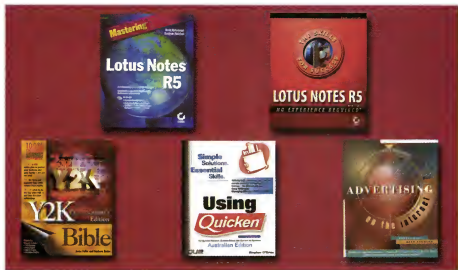
Y2K Bible: Procrastinator's Edition is aimed at individuals and small business. It starts with the very basics, so many readers will find that it devotes many pages to stating the bleeding obvious. One early subheading asks, 'What is a computer?' (Admittedly, this is to introduce the concept of embedded chips.)

The book is short on specifics — there are no lists of compliant or vulnerable software packages — but the general procedures for attacking Y2K in a personal or small business situation are very sound. If you already know enough about the problem and are looking for a guide to Y2K repair, look elsewhere. The *Y2K Bible* takes a long time getting to the point and a relatively short time offering practical advice.

The book also tends to sound alarmist. It caters to the doomsayer element, and there are huge checklists of preparations for your home or business and many highly unlikely 'what if' scenarios. At one point the authors use a cut in the supply of insulin due to Y2K problems as an example of why some people might need to take extra precautions. Nowhere, though, is it explained how insulin supplies, in particular, will be affected.

Y2K remains a big problem and the core advice in this book will help you understand and fix it, but if you're just starting out, something more concise would be of greater help. You might be able to get the book cheaper in the January sales — it will still be a good buy, because the authors clearly intended it to be of ongoing benefit against Y2K problems that may surface throughout next year.

Simon Vandore



Author Jesse Feiler and Barbara Butler
Publisher IDG Books
Distributor Woodslane
Phone (02) 9970 5111
Price \$59.95
ISBN 0-7645-3359-2
Rating ***

Advertising on the Internet

Advertising on the Internet, Second Edition, is one of hundreds of books dealing with online promotions. It stands out as an excellent resource for businesses of all sizes that wish to capitalise on this new advertising medium.

Authors Robbin Zeff and Brad Aronson cover issues, such as the art and science of Web measurement, pricing online ads and legal issues, that many of us are struggling to understand. They approach the content from two perspectives: as both a buyer and a seller of online advertising.

The text is complemented by useful sidebars such as hints and tips (from how to get your ads noticed, to choosing a Web measurement solution), market research statistics, example screenshots and half-page reflections by guest contributors.

Although this is an American book, the majority of the information is applicable to Australian readers, as the underlying philosophies of online advertising transcend national boundaries.

There is an extensive resource directory at the back of the book that will assist you in contacting key companies, products and services within the online advertising industry. You'll find email discussion lists and newsletters for the Internet advertising and marketing industry, lists of search engines, Web sites and resources on the topic and online versions of relevant publications. There is also a list of companies which deal in measurement technologies, market research, loyalty programs,

Guide to ratings

- * Pine needles: Dead on the floor
- ** Candy canes: Only just hanging in
- *** Tinsel: Looks good all-round
- **** Christmas lights: Shine brightly
- ***** Christmas angel: Absolutely top of the tree

auditing services, banner exchange programs and so on. Again, while these are predominantly US resources, the physical location is irrelevant for many services.

This book will suit a variety of readers, from those interested in understanding how their organisation can capitalise on this new promotional medium through to those involved in developing online marketing strategies and maximising their company's online presence. It is definitely one of the better books available on the topic.

Cathie Kennedy

Author	Robbin Zeff and Brad Aronson
Publisher	John Wiley & Sons
Distributor	John Wiley & Sons
Phone	(02) 9805 1100
Price	\$45
ISBN	0-471-29713-5
Rating	★★★★

Mastering Lotus R5 and Lotus Notes R5: No Experience Required

Mastering Lotus Notes R5 and Lotus Notes R5: No Experience Required are surprisingly similar books from the same publisher. Both books aim to teach people how to use the new Lotus Notes client.

Both books also spend far too much time explaining the very basic use of Notes, such as configuring user preferences or using the mail application — two things which are quite intuitive and have extensive online help. In fact, *Lotus Notes: No Experience Required* only begins on lesser-known topics such as using group workspaces, sharing databases or using advanced search features about two-thirds of the way into the book.

It is difficult to identify exactly who these books are targeted at. Lotus Notes isn't a program many people would tuck under at home and most companies would use a few days of in-house training to achieve what these books do in 500 to 800 pages. The only real use would be to keep a copy around the office as a reference.

Assuming these books are actually used by staff trying to become more proficient with this application, the choice between the two will more likely be based on price rather than content. *Mastering Lotus Notes R5* is the more expensive of the two, but includes a CD-ROM with evaluation versions of a few applications that can be used with Notes, as well as several sample

databases to complement the sections on Notes programming.

Lotus Notes: No Experience Required only brushes past creating agents, while most of the focus is on Notes installation and troubleshooting. It includes a good glossary and index, and plenty of screenshots. Of the two books, it seems the most thought-out.

Mastering Lotus Notes R5 attempts too much by including basic development such as database creation, using the Domino Designer and the formula language. This book should really have dropped the first few chapters on basic Notes use and instead focused on basic development, if creating power users was its goal. It sits relatively uncomfortably between the option of a training course or a more advanced development book and *Lotus Notes: No Experience Required*, which is a better choice as a quick reference or beginners book.

The idea of regular users mastering Lotus Notes R5 will probably be terrifying to many Notes administrators. They spend part of their time preventing people from being able to use agents or create databases, and the rest of their time fixing dysfunctional databases that were tampered with by these people. This may be an extremist view, but many administrators are going to be reluctant to let people apply the development content of this book.

Mastering Lotus Notes R5 would be most appropriate for a person who already knows enough to make use of the programming chapters, but doesn't really need to be a developer. A better option would be to choose a book like *Lotus Notes: No Experience Required* as a basic reference, and find something with a little more bite to go further.

Ari Weisz-Koves

Mastering Lotus Notes R5

Author	Scot Haberman and Andrew Falciani
Publisher	Sybox
Distributor	Woodslane
Phone	(02) 9970 5111
Price	\$69.95
ISBN	0-7821-2185-3
Rating	★★

Lotus Notes R5: No Experience Required

Author	Rupert Clayton
Publisher	Sybox
Distributor	Woodslane
Phone	(02) 9970 5111
Price	\$39.95
ISBN	0-7821-2184-5
Rating	★★★★

Using Quicken Version 7 for Windows (Australian Edition)

We don't have any statistics to back this assertion up, but judging by the number of users we come across, Quicken is surely one of the most widely used home applications.

Although it was originally intended for home use, small business features have been added to Quicken and this book pays balanced attention to both areas. Transaction recording, investment management (including superannuation and downloading share prices from the Quicken Web site), budgeting and reporting are covered, along with accounts payable and receivable, payroll and cash handling. Information is also provided on using accessory items such as the Emergency Records Organiser, Financial Address Book, Workflow Manager and the Home Inventory.

Of course, some matters come down to personal preference. For example, O'Brien recommends entering transactions before they appear on bank statements, as this provides a more accurate running balance. That's true, but we find it saves time if we simultaneously enter transactions and reconcile them with the statement. This works as long as your financial habits are such that you intuitively avoid dipping into the red or going beyond your credit limit and therefore don't need an accurate running balance.

The text is clearly written and easy to follow with realistic examples, and some useful hints and explanations are sprinkled around the margins. Plenty of relevant screenshots are presented in legible sizes; their reproduction is better than those we've seen in some other recent books. The overall design is easy on the eye, and the index is useful, although it's a mystery why passing references to particular companies were indexed.

This book provides useful guidance for the beginner, but will also prove to be a valuable resource for anyone who is about to upgrade from a much older version of Quicken, and for those who want help to go beyond tracking their cheque and credit card accounts.

Stephen Withers

Author	Stephen O'Brien
Publisher	Que
Distributor	Pearson Education
Phone	(02) 9454 2319
Price	\$39.95
ISBN	0-7248-1258-X
Rating	★★★★

It'll blow you away.



the shop
com.au

- The lowest prices guaranteed.*
- 30 day money back guarantee.*
- Prompt, fast and reliable Australia wide delivery using Australia Air Express - if you're not at home or the office when they arrive, it's sent to the post office for secure pickup.
- Flat rate shipping charges \$12 anywhere in Australia (up to 12kg - that's the equivalent of 1 large printer) and \$7.50 for Sydney Metro.
- We offer on line payment by all major credit cards.

Scanners

AGFA SnapScan 1212U Colour Scanner	\$237
Epson GT-7000 Flatbed Colour Scanner - USB	\$399
Hewlett Packard 4200C Colour Scanner	\$294
Canon CanoScan 390 Colour Flatbed Image Scanner	\$149

Printers

Canon BJC2000SP BubbleJet Printer	\$175
Canon BJC7100 Bubble Jet Printer	\$615
Epson Stylus Colour 440 Inkjet Printer	\$209
Epson Stylus Photo 800 Printer	\$749
Hewlett Packard DesignJet 695C Colour Inkjet Printer	\$219
Hewlett Packard Laser Jet 1100	\$799

Modems

Diamond Supra 56Kbps Fax Modem - External	\$149
3Com External Data/Fax Modem 56K	\$175
Xircom Realport 56K Modem - Global Access	\$299

Multimedia

Logitech QuickCam Express	\$89
Philips USB CCD Camera - Retail Box	\$189
Philips IDE CD-R Rewritable 4xWrite 4xRecord 16xRead Kit	\$359
Philips IDE 48x CDROM Drive - Internal Retail Box	\$129
Philips IDE 48x CDROM Drive - Internal Retail Box	\$149
Creative PC-DVD Encore 6x Dr3 c/w FREE SPEAKERS	\$699

Game Software

Command & Conquer: Tiberian Sun	\$75
Half Life: Game of the Year Edition	\$58
System Shock 2 - PC	\$64
Syphon Filter - Playstation	\$60
Driver - Playstation	\$77
Shadow Man - Playstation	\$77
ShadowGate - Nintendo 64	\$91
Command & Conquer - Nintendo 64	\$80

Gaming Consoles

Sony Playstation - Dual Shock V2	\$199
Nintendo 64 Console - Pokemon: Limited Edition	\$199
Nintendo 64 Game Console with Twin Controllers	\$199
Nintendo Gameboy - Pokemon Edition	\$125

General Software

Adaptec EZ CD Creator Deluxe Version 4.0	\$119
Adobe Illustrator 8.0	\$649
Adobe Publishing Collection - PC	\$1,699
Corel Draw Version 9.0 on CD Win 95/98/NT	\$749
Macromedia DreamTeam - PC	\$875
Macromedia Flash 4 on CD - PC	\$485
MS FrontPage 2000 on CD Full Version	\$179
MS Office 2000 Professional on CD Full Version	\$899

Video Cards

Creative 3D Blaster Savage4 AGP/PCI Version Retail	\$259
Diamond Viper V770 32Mb AGP Retail	\$269
Diamond Viper V770 32Mb ULTRA AGP Retail	\$329
Creative 3D Blaster TNT2 AGP Version Retail	\$349
Matrox Millennium G400 Dual Head 16Mb SGRAM 300MHz RAMDAC	\$319

Matrox Millennium G400 Dual Head 32Mb SGRAM 300MHz RAMDAC	\$409
Matrox Millennium G400 MAX Dual-Head 32Mb SGRAM 360MHz RAMDAC	\$465
Matrox Marvel G400 16Mb SGRAM 300MHz AGP	\$669

Hard Disk Drives

Maxtor Diamond Max 4320 4.3Gb Hard Drive	\$169
Maxtor Diamond Max 4320 6.4Gb IDE Hard Drive	\$189
Seagate Model 8 8.4Gb IDE HDD Drive	\$219
Maxtor Diamond Max 4320 10.9Gb IDE Hard Drive	\$265
IBM Deskstar GXP 9.1Gb IDE Hard Drive	\$269
Maxtor Diamond Max Plus 5120 10.0Gb 7200RPM IDE HDD	\$299
Maxtor Diamond Max 4320 12.0Gb IDE Hard Drive	\$429

IOmega

Iomega Parallel Zip Drive 100Mb - External	\$189
Iomega USB Zip Drive 100Mb - External	\$240
Iomega Clik 40Mb Drive for Notebook Computers	\$345
Iomega Parallel Zip Drive 250Mb - External	\$291
Iomega USB 250Mb Zip Drive - External	\$344
Iomega Clik 40Mb Disks - 2 Pack	\$50
Iomega Clik 40Mb Disks - 10 Pack	\$169
Iomega Zip Disk 100Mb 10 Pack for PC	\$179
Iomega Zip Disk 250Mb 10 Pack for PC	\$189

Media

Samsung Blank CDR Discs 50 Pack	\$99
Samsung Blank CDR Discs 100 Pack	\$195
Samsung CD-RW Discs 10 Pack	\$169

Monitors

Philips 105S 15" Monitor	\$299
Philips 107S 17" Monitor	\$499
Samsung Syncmaster 510S Digital 15" Monitor	\$335
Samsung Syncmaster 900P Digital 19" Monitor	\$1,099
Sony 15" Trinitron Digital Multiscan Monitor	\$439
Sony 17" Trinitron Multiscan Monitor	\$799

Personal Digital Assistants

Palm IIIe Personal Digital Assistant by US Robotics/3Com	\$449
Palm IIIx Personal Digital Assistant by US Robotics/3Com	\$549
Palm V Personal Digital Assistant by US Robotics/3Com	\$719

Sound Cards

Diamond Monster MX300 Sound Card and Software	\$139
Sound Blaster PCI 128 Sound Card Retail	\$79
Sound Blaster Live! Value Pack Value ANZ - FREE SPEAKERS	\$249

Speakers

Altec Lansing ACS22 - 2 Piece Speaker System	\$59
Cambridge PCWorks Speaker System	\$149
Altec Lansing ACS45.1 - Power Cubes - 3 Piece Speaker System	\$189
Altec Lansing ACS54 - 5 Piece Speaker System	\$249
Desktop Theatre 5.1 DTT2500 Digital Speakers	\$849

Digital Cameras

Agfa ePhoto CL30 Digital Camera - USB	\$749
Sony FDT3 Maxica Floppy Disk Digital Camera	\$1,129

Call us on
1800 228 200
to find out more.

*conditions apply

Perspective: Seasons in the sun

High Noon

High Noon, an exposé on the growth of Sun Microsystems under the leadership of Scott McNealy, is one of many books to explore a Silicon Valley high-tech success story.

The book begins with the story of how four men in their twenties came together to form a company. Original founder Vinod Khosla had the vision, Andy Bechtolsheim and Bill Joy offered the technical expertise, and Scott McNealy brought manufacturing and people skills to the company. In a no-holds-barred exposé, author Karen Southwick chronicles the company's growth from its first contract, worth \$40 million (it virtually gave away machines at cost to Computervision), to the multibillion-dollar success it is today. Southwick details the power struggles and disputes, as well as the triumphs.

The focus very quickly turns to Scott McNealy, who at 29 was appointed CEO after his friend Khosla was ousted just two years after he began the company.

McNealy declined to be interviewed for the book, so the bulk of the material comes from interviews conducted with Sun employees, former employees, allies and competitors. The book also draws extensively on the work of John Barry's early book about Sun, called *Sunburst*.

The pages are filled with anecdotes, inside information and quotes from current Sun managers, executives and engineers. The author managed to get inside the organisation and absorb its culture and understand its management style, all without interviewing the CEO.

At times, Southwick crosses the fine line between presenting an inside story and her own views. A clear example of this is the conclusion, in which she speculates about Sun's continued dominance. Her advice is to back off on the Microsoft bashing, get back to basics and give customers what they need, and for McNealy to adopt a more sophisticated outlook.

As a chronicle of a CEO's role in building a company, this is not an appropriate vehicle for an author to espouse their views. Southwick praises her own work in the preface, saying the book "is both instructive and entertaining", and contains "rich, evocative detail".

Australians may find the regular use of American phrases such as "kick-ass" and "frat-boy" more than a little vexatious. However, minor criticisms such as these aside, *High Noon* is an entertaining read. It will appeal to those with an interest in the high-tech industry and offers lessons on how to cope in a chaotic, unpredictable environment.

Cathie Kennedy

Author	Karen Southwick
Publisher	John Wiley & Sons
Distributor	John Wiley & Sons
Phone	(02) 9805 1100
Price	\$39.95
ISBN	0-4712-9713-5
Rating	***



Microsoft: First Generation

It's often assumed that Bill Gates equals Microsoft. This is, of course, not true, but with a few notable exceptions such as Steve Ballmer, not much attention is paid to the rest of the people who make up the vast Microsoft empire. *Microsoft: First Generation* covers the careers of 12 people who joined Microsoft at its inception and were part of its ongoing operation.

If you're looking for a behind-the-scenes muckraking, look elsewhere. Although all the subjects interviewed have since moved on to other companies and projects, they're mostly pro-Microsoft. However, a lot of what they do say points to the high-pressure nature of working for

the world's largest software company. The claim on the back cover that the book covers "key" Microsoft players is a slight hyperbole. It does cover people such as Richard Brodie (who wrote the first version of Word) and Min Yee (who effectively kick-started Microsoft Press), but for the large part, these are simply hardworking people who happen to be very good at their jobs. There's very little of the visionary, and more of the heavy elbow grease.

There's a fairly heavy slant on Microsoft Press — there are histories of Russell Borland (head technical writer), Dave Neir (business operations manager), Min Yee (publisher) and Russell Steele (production manager). Clearly author Cheryl Tsang has better contacts within Press than anywhere else.

Microsoft: First Generation provides an insight into the massive company that Microsoft has become. By starting with Bob O'Rear, who wrote early versions of MS Basic and DOS, and getting a view of the proto-Microsoft, the reader gets a better appreciation of the phenomenal growth of the company and its development into dispersed functional units. There is a tendency to jump around chronologically, which some may find a little unsettling.

Don't jump into *Microsoft: First Generation* expecting a blow-by-blow history of the company — this is strictly biographical detail on some of the behind-the-scenes people who helped make Microsoft become what it is today. The reader is expected to have at least some basic knowledge of Microsoft's basic product line. *Microsoft: First Generation* does not excel in outlining Microsoft's business strategy, or in justifying its market position. Instead, it offers an insight into how people survive the Microsoft culture: by working hard, perhaps up to 365 days a year, and being ready to compete in one of the most cutthroat corporate cultures in the world.

Alex Kidman

Author	Cheryl Tsang
Publisher	John Wiley & Sons
Distributor	John Wiley & Sons
Phone	(02) 9805 1100
Price	\$39.95
ISBN	0-4713-3206-2
Rating	***

Around the world

Encarta Reference Suite 2000

Comprising the latest editions of the well-known Encarta encyclopedia as well as its companion atlas and dictionary, Encarta Reference Suite 2000 is an attractive bundle.

The encyclopedia's coverage is broad, though sometimes Anglocentric (see, for example, the entry for 'parliament'). It provides several routes through the material; along with a conventional search facility, there are timelines, topic trails and more. The Statistics Centre, one of several 'InterActivities', allows convenient graphical comparisons of a variety of statistics from different countries, and provides lesson plans for schools. The content appears sound, but there seems to be inconsistent use of both imperial and metric units.

The atlas starts with a view of the globe. Zoom in to an area of interest and the level of detail progressively increases. You can also follow various world tours. Virtual flights over rendered terrain give a different view of a region's topography. The atlas also provides descriptive, statistical, pictorial and audio content. It doesn't match the beauty of finely drawn maps, but it is very useful.

The dictionary includes a thesaurus and a dictionary of quotations, as well as English/French and English/German dictionaries. Spoken pronunciations are often provided, as are illustrations and sound clips. The dictionary integrates with Word and PowerPoint so you can easily check that you've used the correct word. From other applications, use the QuickShelf icon in the System Tray. We had trouble getting the dictionary to work, but the solution was in the Knowledge Base on Microsoft's Web site.



Its parental control is a flawed implementation of a reasonable idea. If a word has a taboo meaning, all of its definitions are hidden when parental control is active, though the word remains in the index if it has an acceptable meaning. Only words with solely taboo meanings are completely hidden.

Encarta Suite is an impressive product and especially good value if you can take advantage of the introductory cashback offer.

Stephen Withers

Publisher	Microsoft
Distributor	Microsoft
Phone	13 20 58
Price	\$199
Requires	Pentium 90, Windows 95/98/NT 4.0, 24M RAM (32M for NT), 155M hard disk space, 4x CD-ROM drive, soundcard

Rating ★★★★★

Quickstudy Spanish

The aim of this language package is to teach you *some* Spanish in a very short time so that you can get the most out of your trip to a Spanish-speaking country. Quickstudy Spanish is really geared towards Americans going abroad for the first time. A very cheesy American 'personal tutor' named Ashley shows you around and explains everything to put you at ease.

There are three main areas to explore: the Language Lab, Conversation Lab and Game Room. There is also a dictionary and a grammar reference, so while no grammar is taught in the actual exercises, it's there in index form if you want to know something.

The Language Lab exercises are all about vocabulary, situations and communication. The situations are dialogue between two actors using vocabulary from the previous lesson. In the Conversation Lab, your ability to communicate is tested by an actor and you reply using a microphone and your best accent. If you want a question repeated you say 'Perdone?'

In the Game Room you can finally get the Spanish lyrics and English translations to well-known Spanish songs like 'La Bamba' and 'La Cucaracha'. Conquest is

Take a round-the-world trip, brush up on your Spanish, hammer your keyboard or chill with the bunnies.



a strategy game that helps build your vocabulary, and Video Match tests your comprehension in a version of Memory.

Quickstudy Spanish is effective as an introduction to Spanish, and it allows you to become accustomed to listening to and trying to communicate in Spanish. It is recommended, especially for newcomers to language studies.

Michelle Roach

Publisher	The Learning Company
Distributor	Roadshow Interactive
Phone	(02) 9552 8600
Price	\$49.95
Requires	486DX/66, Windows 95/98, 8M RAM (16M recommended), 2x CD-ROM drive, 256-colour SVGA, soundcard, microphone, speakers

Rating ★★★★★

Tonka Workshop CD-ROM Playset

Tonka toys are so renowned for their durability and resistance to a toddler's joyous capacity for destruction that the company adopted the motto 'Tonka-tough' from loyal consumers. They made the kind of toys you could ride down the driveway, smash into a wall repeatedly, roll off a cliff top, and still be able to pass it on to your younger siblings to continue the tradition.

With a history like that it's difficult, nay frightening, to imagine Tonka taking its brand of fun to the fragile world inside your computer room, but by partnering with Hasbro Interactive to produce the Tonka Workshop CD-ROM Playset it has managed to do just that.



Tonka Workshop combines interactive software with a toy console that sits on your keyboard to introduce an element of physical play to what would normally be a purely intellectual interactive experience. The console gives kids physical tools to operate the virtual tools they encounter in the interactive workshop. Tonka Workshop's unique strategy for giving children control over the PC makes it very simple to use. Tonka Joe, a do-it-yourself action hero, guides the child throughout the interactive presentation and an onscreen display indicates which tool or button should be activated at each stage.

The interactive presentation offers kids the choice to explore all sorts of building scenarios from simple construction exercises to a mildly immersive handyman adventure in the Tonka Workshop van. Each exercise is designed to help children develop logic skills, acquaint themselves with basic mechanical concepts and develop their dexterity. For a toy that may sound a bit dry, there are plenty of weird contraptions to keep kids entertained, and they'll have plenty of fun using all the tools and gadgets on the console.

If you thought that tailoring toys for a particular gender went out of fashion with cigars outside the delivery room, think again. Tonka's marketing information boldly states that Tonka Workshop is targeted at boys aged three and up (the upper age bracket being about six). We'll let you judge Tonka's political correctness, but gender issues aside, Tonka Workshop is a novel and well-designed interactive toy.

Andrew Colley

Publisher	Hasbro Interactive
Distributor	Hasbro Interactive
Phone	(02) 9953 8788
Price	\$79.95
Requires	Pentium 90, Windows 95, 16M RAM, 2x CD-ROM drive, SVGA capable of 8-bit colour, soundcard
Rating	★★★

Reader Rabbit Playtime for Baby

The attractive thing about this title is its claim that the software is suitable for ages nine to 24 months. Nine months? Won't the unfortunate infant fall off the chair?

When you first load the CD, you are confronted by a somewhat annoying American 'mother' who presents Playtime for Baby with reassuring suggestions such as, "Be careful to keep one arm around your baby at all times". Phew.

"Your baby's enjoyment and success in this program depends on your involvement." Aha, so that's the idea. Unfortunately there was no nine-month-old in the office on the day of testing, but we were given loan of an 18-month-old future programmer.

Fortunately, American Mom doesn't appear again, so the hosting is left to Reader Rabbit's pal, Mat the mouse. All the activities are very bright and colourful and full of loud noises, from farm animals to percussion instruments. The software

certainly delivers on the interactive, potential learning front. But does it hold a baby's, or in this case, toddler's attention?

Well, no. No matter how much we pointed, clapped and cooed, Lucie was far more interested in playing with the mobile phone, which was nearby, and just about everything else on the desk other than the computer screen. Oh well, as the presenter says, if you find that your baby isn't interested, wait a few months and try again.

In the meantime, toddlers will no doubt enjoy the second CD in the pack more, as it contains 17 additional songs.

Lindsay Hayman

Publisher	The Learning Company
Distributor	Roadshow Interactive
Phone	(02) 9552 8700
Price	\$49.95
Requires	Pentium 75, Windows 95/98, 16M RAM, 20M hard disk space, 2x CD-ROM drive, video card, soundcard
Rating	★★★

Interactive News

● The Universal Serial Bus (USB) system — the plug and play serial bus standard designed to revolutionise PC hardware installation and use — is getting a makeover, as revealed at the recent USB Developers Conference in the United States. USB 2.0 will purportedly allow transfer speeds of up to 480Mbps, which is more than 40 times that of the current USB maximum of 12Mbps. The USB Promoter Group are hoping that USB 2.0 will challenge existing high-bandwidth interface mediums, like SCSI adaptors. The standard will also be backward-compatible with earlier (and current) versions of USB, ensuring current USB hardware won't become obsolete. USB 2.0 will be introduced during the first half of 2000, and compliant hardware is set to follow soon after.

● The portable digital music player (PDMP) market is currently booming. On the back of the recent release of the Diamond Rio 500 (its primary feature being expanded data capacity), Creative Labs has announced its next entry in the PDMP market, the Nomad II player. Including a host of unique features — like USB connectivity, voice recording

and an FM radio tuner — the Nomad II also supports reprogrammability. This feature gives the Nomad II added versatility and future support for other audio formats (on top of the existing MP3 standard) as they become available. Updates will be implemented via downloadable firmware extensions.

In other news, SanDisk has recently signed with Toshiba to develop gigabit technology for the flashcard medium, to be used in digital devices such as PDMPs and cameras.

● It may seem a little far-fetched to most, but one small hardware developer thinks that the world's almost ready for fully functional automobile computing. The current prototype model of the KarPC (by KarPC) — featuring a 6in LCD screen, soft-touch interface buttons (an optional mini-keyboard is in the works) and a CD-ROM drive — has been designed to fit into the dashboard of the car. It can supposedly be installed almost anywhere else in a vehicle. Although the KarPC would be welcome company in traffic jams, it remains to be seen whether or not the device will be approved by vehicle safety authorities.

Art Mitchell

the bible

new edition out now

FREE CD

includes playable demos:

Dino Crisis
MGS: Special Missions
This is Soccer
Quake 2
Soul Reaver
40 Winks
Tarzan

on video

Crash Team Racing
Leftfield: Afrika Shox

PlayStation
Magazine



FREE!
EXTRA DEMO DISC
FINAL FANTASY VIII
PLAYABLE DEMO OF THE WORLD'S BIGGEST GAME

If you worship PlayStation
get the bible

Test your role-playing skills with a popular game sequel and some impressive clones of strategy classics.

Sequels and clones

Legacy of Kain: Soul Reaver

Soul Reaver, the sequel to the 1996 console port Blood Omen: Legacy of Kain, is a very different beast to its predecessor. Focusing less on RPG elements, Soul Reaver picks up events more than a thousand years after Kain's ascension.

This time, instead of playing Kain, you play a character hell-bent on his destruction, Raziel, a former lieutenant of Kain. Cast into a kind of hell for having the gall to grow wings before your master, you are resurrected by a being known as the elder god who charges you with destroying your former master and his servants.

Soul Reaver is definitely a member of the Tomb Raider genre, although it is somewhat fresher than many titles of its ilk. The plot is great, the voice acting superb, the graphics are excellent — a little better on the PC version than on the PlayStation version — and the environment design is first-class. There are no levels per se, and no loading screens; instead it's all one big environment. A gamepad is recommended for this game, as there are a lot of keyboard controls to master. This is not a game for those without serious keyboard coordination (think Die by the Sword).

Soul Reaver is not just a matter of beating the stuffing out of your enemies. Some of them are vampires, so you have to kill them in inventive ways: hurl them onto spikes, into fires or rivers, or cast them into the sunlight. Later, you get a sword that helps you in your task. It's quite a twist on the standard action fare, and the animations are fantastic. Although after you've staked the gazillionth vampire, you realise that it's actually more efficient just to jump over them because when you kill them, you know they will have respawned by the time you return to the area.

It does sometimes get a little frustrating, and you're constantly retracing your steps, looking for the right path to go down next. Then there's endless block puzzles reminiscent of Tomb Raider, and the 'jump over crevice' challenges that require you to run for miles back to the starting point if you miss one of the tiny platforms you're meant to land on become a bit much. After repeated attempts, you're not real keen to do it again.

These criticisms aside, it's a very fine game. It is quite fun apart from the frustrating bits and the disappointing ending. You've been warned.

Nathan Taylor

Distributor	Ozisoft
Phone	(02) 9317 0000
Online	http://www.eldosinteractive.com/legacyofkain/
Price	\$89.95
Requires	Pentium 200, Windows 95/98, 16M RAM, 320M hard disk space, Direct3D video card, 4x CD-ROM drive
Classification	MA (15+)
Rating	★★★★

Force 21

The influence of Tom Clancy is clear in all the games from Red Storm Entertainment — hardly surprising when you consider he is a company founder. Although Force 21 doesn't draw directly from any of his books (unlike Rainbow Six, for example), it still occupies familiar Clancy territory.

The year is 2015 and expansionist moves by China into neutral Kazakhstan



precipitate a war with its superpower rival, the US. The game unfolds via a linear campaign in which you fight for supremacy on either the American or Chinese side.

Like Rainbow Six, each mission is pre-faced with a detailed intelligence briefing. This is followed by a setup screen listing the vehicles pre-assigned to the mission and the platoon commanders from which you choose. You then proceed to the meat of the game: the 3D combat phase.

First impressions of Force 21 are good. The environments are atmospherically modelled, sound effects (including troop voice-overs) are realistic and the 3D graphics, although spartan, are attractive. The game is tactical, rather than strategic, and rewards careful consideration of factors like topography, assault speed and platoon formation.

This is not a realistic war game, however. Vehicles have an unlimited supply of ammunition, there is no infantry, and the simulation of vehicles — tanks, in particular — are rudimentary. You don't get to choose the vehicles for each mission, nor can you rearrange the platoons until you have entered the combat phase, by which time the enemy may be all over you.

Perhaps the most frustrating aspect of this game is the dreadful pathfinding AI.



6 MONTHS FREE INTERNET ACCESS

Purchase any **DYNALINK** 56k V.90 modem and enjoy 6 months **FREE** unlimited Internet hours with nationwide Internet Service Provider **TPG** (one-time \$39.95 admin fee applies).

DYNALINK'S FAMILY of HIGH SPEED 56k V.90 MODEMS



External



Internal (ISA or PCI)



Notebook

BONUS!

FreeCall Customer Support plus iPhone 5 Internet Phone FREE
Norton Utilities 3.0 only \$20, Compton's Infopedia only \$15
With every modem: Quake II only \$10 or get THE LOT for only \$40.



DYNALINK 56k V.90 modems with 6 months FREE Internet access are available from all good computer resellers for a limited time only.



Want more information? Visit our website at www.dynalink.com.au or call Askey Australia on 1800 357 253

6 months unlimited Internet hours available in Sydney, Penrith, Kiama/Mollongong, Lake Macquarie, Melbourne, Brisbane, Southport, Canberra, Adelaide, Perth, Hobart, Launceston and Darwin. Unlimited 3 hour sessions. 300Mb download limit per month.

Games News

● Microsoft's latest version of the DirectX Application Programmer's Interface (API) — a set of advanced multimedia system instructions used by software (in particular games) to interface with computer hardware — has finally been released. DirectX 7.0 contains a number of new features, namely better network support for multiplayer gaming, an extended sound sample suite and increased support for peripherals. As with DirectX 6.0, Microsoft has focused improvements on the Direct3D component of the API, improving 3D graphics acceleration capabilities.

Benefits will be most apparent in software optimised for DirectX 7.0, but a general installation of the API will mark a humble performance increase with software utilising the DirectX API — especially for those using 3D graphics acceleration.

● Blizzard Entertainment (developers of best-selling PC titles *Diablo* and *StarCraft*) announced at this year's ECTS games expo in London that *Warcraft III* — sequel to the multi-award winning and highly regarded real time strategy game *Warcraft II: Orcs & Humans* — was in the advanced stages of development. In a move that has surprised many, Blizzard revealed that *Warcraft III* is to be Blizzard's first role-playing strategy game, as opposed to being an RTS effort, as

expected. Using a full 3D engine, *Warcraft III* takes the basic elements made popular by the series (resource, building and squad management) and reduces the scale a notch. Players now manage only a handful of units and will be encouraged to develop the skills and strengths of 'hero' units within the party as the adventure progresses. Gone are the 'battle maps' of old. *Warcraft III* will instead feature a large landscape complete with non-player character populated towns to traverse and battle in. There will also be side quests much like those seen in *Diablo*. Here's to another round of sleepless nights battling poorly-groomed Orcs! Zug-zug!

● On the topic of games exhibitions, Australia's getting its first local taste of these sensory-overloading events, in the form of the Australian Competition Games Expo (ACGE). Based on the E3 (US) and ECTS (UK) models — where the industry hires a suburb for a few days and crams in an entire year's worth of upcoming gaming-related wares for display — the ACGE will be held at Homebush Bay in Sydney in March 2000. The expo will feature industry members from around the world, as well as plenty of home-grown content. All those games under one roof? We'll see you there! Gamespy

Units frequently bog down when you change the formation or orientation of platoons and they frequently experience difficulties negotiating features like trees or buildings.

Notwithstanding these problems, *Force 21* can be fun, especially in multiplayer mode. You just shouldn't expect a hard-core simulation of conventional land-based warfare.

Jon Gill

Distributor	Jack Of All Games
Phone	(03) 9934 5530
Online	http://www.redstorm.com/force21/
Price	\$89.95
Requires	Pentium 200, Windows 95/98, 64M RAM, 150M hard disk space, 4x CD-ROM drive, Direct3D video card recommended
Classification	G (8+)

Starfleet Command

There have been previous attempts to bring board games to a computer audience, and some of them worked, and some didn't. However, it's much trickier to bring strategy-style board games with a dash of role-playing to a computer audience; it involves balancing the numbers against the action. *Starfleet Command* is loosely based on *Star Fleet Battles*, a game system that relies heavily on stats and careful planning.

Does it transfer well to the computer medium? Not really. This is largely due to the fairly difficult task of controlling the interface, rather than the strategy element. In *Starfleet Command* you take control of a species fleet along *Star Trek* lines — Federation, Klingon, that sort of thing — and engage in battles with opposing fleets. There is some semblance of a plot. Orders come in thick and fast from your

down to it, playing *Starfleet Command* successfully depends on careful strategy attacking opposing ships.

Starfleet Command is let down by its interface. Onscreen icons are small and hard to make out, and the last thing you want to do when staring at a photon torpedo in the face is forget which icon controls shields. Matters aren't helped by the fact that when you think you're ready to fire weapons and pounce on the enemy, you find that your shields are using up all available energy.

It's a pity that the controls are unwieldy, because *Starfleet Command* looks great. There's lots of realistic space play with, and although the ship models are fairly simple, they scale and move well. *Starfleet Command* may look good, but there are plenty of better strategy titles. Alex Kidman

Distributor	Roadshow
Phone	(02) 9552 8700
Online	http://www.interplay.com
Price	\$89.95
Requires	Pentium 200, 32M RAM, 250M hard disk space, 4X CD-ROM drive
Classification	G
Rating	★★

Street Wars: Constructor Underworld

"So, kid, you still wanna be a Godfather huh? Ya still training with Gangsters from Eidos? What's that? The controls were too complicated, the actual game too hard, and because you didn't have much fun? Well, kid, killings, extortion and mugging's aimed exactly what I'd call enjoyable — but here's a game which might make things a little more interesting for you."

Street Wars, from Studio 3, has all you would expect from a 1920s mobster-style game — extortion, police bribes and drinking dens, as well as real time strategy elements such as resource management and breeding of workers. The aim is to become a Godfather by building up your empire and expanding into other territories. Obviously, it's not that easy — remember, the heart of any gangster's game is doing battle with rival gangs, stealing tenants from other areas and persuading the police to look elsewhere.

Things often get quite complex in the games, and one of *Gangster's* main downsides is its complicated controls and options. Thankfully, *Street Wars* has

People are not always who they seem.

Meet Ann, 24.
Gym junkie, likes to shop,
secretary in a law firm.

Also a powerful enchantress
and a merciless advocate of
justice, striking terror in the
hearts of evil doers.

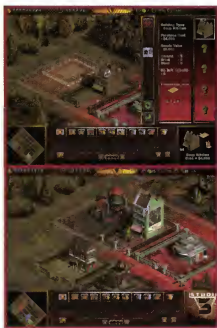
Ann or Enchantress Diemonda,
Avenger of the Innocent.

Which one will you meet
tonight?

Are
you
with
us?

ULTIMA ONLINE DISCOVERY EDITION
COMING DECEMBER 1999





game, which sees the Godfather guiding you through your early missions.

It is clear that Street Wars is different from other games in this genre. Breaking away from the usually serious mood of other such games, Street Wars takes a humorous approach. All the characters have stereotypical hoodlum personalities, and the cartoon-style graphics add to the tongue-in-cheek attitude that makes Street Wars so refreshing.

If you want to be part of the gangster era but have found previous games too complicated, then Street Wars is for you. With its black humour and sufficient level of difficulty, Street Wars should keep you entertained for some time.

"So, that's about it, kid. Just remember, don't cross the Godfather kid, or you'll be wearin' a nice new pair of concrete boots. Got that?"
Alan Crawford

Distributor
Phone (02) 9902 3073
Online <http://www.streetwars.com/>
Price \$89.95
Requires Pentium 200, 32M RAM 8x CD-ROM drive, 2M PCI video card

Classification
Rating M (15+) ★★☆☆

Darkstone

It's impossible to review Darkstone without mentioning the Diablo, Blizzard's classic 1997 action role-playing game to which this game dearly pays homage.

The basic format is the same; create your character, explore dungeons, kill monsters, gather booty and experience, improve your character, explore deeper dungeons and so on until the final showdown with the evil uber-baddy. Throw in all manner of weaponry, armour and magical tools, and a bunch of quests to keep you occupied along the way, and you have an amazingly addictive game.

Like Diablo, the dungeons are randomly generated for each campaign, so the replayability value is exceptional. There are more levels to explore in Darkstone, and more quests as well; some are unrelated to the main storyline, others are critical to the successful conclusion of the game. The story itself is traditional fantasy fare — you must recover seven crystals that make up the Time Orb, a magical device that gives you the power to crush Draak, the evil priest-turned-dragon.

Similarities with Diablo abound: town-based NPCs that provide healing and other services; the use of potions to maintain health and mana; a dungeon overlay map showing you where you've been; barrels that explode when you crack them open; and magic portals to transport you

between town and dungeon. Multiplayer mode is available, but the absence of a free server like Blizzard's battle.net means it is harder to find a game.

There are enough subtle enhancements, however, to make Darkstone compelling in its own right. The 3D game has an intuitive and easy-to-use camera view. You can also play with two characters at a time.

If you liked Diablo and can't wait for its oft-delayed sequel, then buy this game.

Jon Gill

Distributor Jack of all Games
Phone (03) 9934-5530
Online <http://www.delphinesoft.com/darkstone/>
Price \$89.95
Requires Pentium 266, Windows 95/98, 64M RAM, 8x CD-ROM drive, 3D video card

Classification
Rating MA (15+) ★★☆☆



apcmag.pocketbook

EVERYTHING YOU NEED & NOTHING YOU DON'T

the revised edition
Linux
pocketbook



The penguin is back, and this time in style. Learn Linux the easy way and experience what it's like to use a powerful operating system that puts you in control. Includes Red Hat 6.0 and OpenLinux 2.2-N.

More pages, more CDs, more Linux.

On sale NOW!
\$19.95

ACP tech

Order online now at <http://apcmag.com/shop/> or phone (02) 9260 0000 or 1800 232 515 and quote RELPT. Free home delivery.

PC User

The coolest
PC games
for Christmas



3 CDs
Out now!

- Exclusive game demos
- 20,000 clip-art images
- Fully working software

If you're having trouble finding your mate, try looking online.

Love at first site

Catch

Catch claims to be more than just a conventional online dating or match-making service. Sure, you *could* meet the partner of your dreams or your lifelong soulmate, but chances are you probably won't. Catch's Web site, "the social centre for the Catch community", is also intended to be a casual social meeting place of the virtual kind. In other words, Catch is a forum where social victims of the digital age can connect with each other (no pun intended), chat online, seek out a penpal, hook up with a golf buddy, find a travel companion or participate in a forum.

You have two choices when using Catch. You can enter the site as a guest and peruse the profiles of Catch's distinguished list of dateables, or register online as a member to "access the larger community of interesting people". If you're not convinced by this, Catch offers a free seven-day membership scheme to entice reluctant romantics as a kind of "try before you buy" service.

Although money can't buy you love, you do have to pay for the privilege of online dating. Catch's service is relatively inexpensive, ranging from \$10 for a one-month membership to \$95 for a 12-month subscription. This is a real bargain when you consider that for the price of a romantic dinner for two, a bottle of wine and a couple of movie tickets, you get access to an endless array of potential suitors.

Once you're a member all you have to do to 'catch' yourself a date is fill in a member profile detailing personal information (the make of car you drive),

basic interests (the radio station you listen to) and personality traits (your propensity to talk to strangers) and submit a search. There are three different search types to choose from—alias, quick or full—and performing a search is an exercise in picking your perfect partner. If your search reveals any matches, it's up to you to initiate communication with either an eCard or eThread.

Catch uses a Jungian-style questionnaire to generate scores and determine your compatibility with others. Although this may seem like a theoretically sound way to find a suitable partner, the crude profiles tell you little about the person you've been matched with, and after you've read enough profiles, it becomes difficult to distinguish between them.

If you think Catch could be the answer to your dating prayers, think again. A quick search based on my *modest* criteria revealed 32 matches, and among the names were Dionysus, RealRomantic, RUthforME, Uteman, BigBadBen and The Hobbit. Promising indeed. A full search proved even less fruitful because the search timed out, but I guess that's better than the "Sorry, no matches" message I initially received.

Catch is a good way to ease yourself into the electronic dating scene without experiencing any serious personal trauma or grievous bodily harm. It guarantees your privacy through a secure system; you decide if and when to reveal your identity to other members. This means you can socialise in an environment that is casual and non-threatening, and devoid of any of the pressures you might face in a live dating situation.

The delays experienced when using Catch, coupled with its dubious slogan—"The online meeting place for real-life people" (is there any other kind?)—do little to inspire the lovelorn's confidence in the service. Catch is a nifty concept, but give me the real world dating experience any day!

Vanessa Fazzino



RSVP

Try this simple test. It's early on a Friday night and you're curled up in bed reading APC. Look to your right. The only thing lying next to you is the latest issue of the *Linux Pocketbook*, and you can't wait for Saturday evening, which you've set aside in your diary to install Red Hat 6. Are you nodding your head furiously? Then I think it's time to RSVP.

RSVP is an online dating site, which claims to be Australia's largest singles site. Membership to RSVP is free. The first step is to set up your own profile, starting with a codename. The profile is a short personal description that lets other members find you. If you're initially unsure about registering with RSVP, then you can enter as a guest. Using guest entry, you can search the database of RSVP members for a compatible person. RSVP is not limited to Australia—members can be from any country in the world.

To contact another member, you must buy a book of e-stamps. Starting price for a book of 10 is \$9.95, and as the site says, it's cheaper than a movie or a couple of drinks at the bar. Once you've contacted someone, you can get to know them anonymously before you need to give out any personal details. RSVP membership includes some great features, such as a voicemail service which allows you to add your voice to your profile. There is also an events section, which lists gatherings of other RSVP members, and you're invited!

RSVP is a great way to meet new friends, and who knows, maybe spark



Online
Rating

<http://www.catch.com.au/>
☆☆☆

some romance. It opens the world to your home. OK, so you've arranged the date. Now to order the pizza and video online. There may be time for a quick perusal of the *Linux Pocketbook* while you wait for everything to arrive. Some people will never learn.

Andrew Broadhead

Online <http://www.rsvp.com.au/>
Rating ★★★

Match Maker

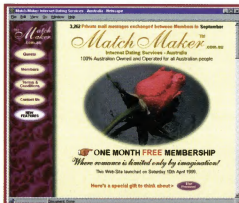
Move over Dexter, 'Perfect Match' in the '90s has gone online — sans Greg Evans and blonde bombshell sidekick, of course!

Becoming a contestant on Match Maker is as easy as filling in a three-part questionnaire that comprises a personal profile, an 'in your own words'-style essay and a profile of your ideal partner.

There are then several ways you can go about playing the online dating game. You can join as a member and simply wait for others to make contact with you, jump right in and make the first move or let Match Maker's 'Dexter' find you a perfect match based on your 'ideal partner' profile.

Once you've visited a few Internet dating sites, it's not hard to figure out that they operate in a fairly stock-standard way, give or take a few refinements. Although Match Maker has yet to break the boundaries of the online dating genre, this site does it slightly better than the rest that we've seen.

Match Maker boasts services that make personal ads and dating agencies look like relics from a prehistoric age, including public and private chat rooms where you can rendezvous with partners in real time, an efficient email delivery and notification system, and a free photo-scanning service for those who think including a photo with their profile will boost their 'pull' power.



Surfbaud: Silicon dating

The first written or drawn form of human communication may not have been information about hunting grounds or religious imagery, but a personal ad. A mark on a rock inviting someone to meet them there again when the moon is full. People aren't only hunters and gatherers, they're also socialisers. Tribal societies have always had strong taboos against marrying inside social groups, and writing is a way of communicating an idea to people outside the group that you normally converse with. Anyone who has ever used a public toilet will know that the 'personal ad' style of rock art is still alive today.

The 20th century has seen the emergence of personal ads and dating agencies, as people seek out new ways to meet others outside their existing circles of friends and workmates. Personal ads allow people to select a potential date for themselves, by reading through the list of ads or writing their own. The ads are written in a code that quickly becomes familiar to lonely hearts, and people can be quite creative when writing their own descriptions. They can spell out their interests, what they are looking for — a companion, casual date, lover or spouse — using just a few mysterious acronyms.

Dating agencies, on the other hand, appeal to the professional class by doing the selection for them, in exchange for a fee. To register with an agency, you usually have to complete a

detailed questionnaire on your occupation, interests and idea of a suitable partner. Agencies often differentiate themselves with their own unique theory of compatibility. These theories can be drawn from astrology, numerology, popular psychology, pseudo-science, or a combination of such theories. Dating agencies have also seen the potential in new technologies — who can forget the video dating agencies of the '80s?

Internet dating sites combine elements of both personal ads and dating agencies. You can usually browse through the sites' list of eligibles for free, but if you want further assistance, you have to pay for it. Online personal ads have the advantage of being easily searched, and you can quickly make contact if you like someone's entry. However, if you want the site to do the looking for you, you'll still have to fill out a more detailed questionnaire.

Of course, dating sites are not the only places people meet online. We've all heard the urban myths about couples who met online and flew across the world to marry each other without ever having met in person. These stories are always based on chat groups and email, not dating sites. Part of the thrill of meeting someone in a chat room is their anonymity; you have no way of knowing the truth of what the other person reveals about themselves. Then again, haven't relationships always been like that?

Glenn Phillips

The site is animated and extremely well designed, but its attempts to add a romantic touch — pulsating love hearts, pouting lips that blow kisses and red roses that bloom in real time — have only ended up making the site look like an '80s Hallmark greeting card.

Match Maker's only serious flaw is that, unlike other sites, it doesn't allow you to browse its members database unless you commit to membership. The upside to this is that it offers a free one-month trial membership for the first 1,000 people that join the service, as well as the option of half-price membership for anyone who wants to become a full member.

With its strong emphasis on a professional service, Match Maker

does take a little of the fun and light-heartedness out of online dating, and as such would suit those more serious and discerning romantics who are looking for genuine relationship opportunities.

Match Maker is an Australian owned and operated site, and member feedback posted on the site would suggest that it is one of Australia's premier Internet dating sites (although there isn't a romantic getaway to Vanuatu awaiting you when you've met your match). It seems Dexter's days of 'perfect matching' are well and truly over.

Vanessa Fazzino

Online <http://www.matchmaker.com.au/>

Rating ★★★★★

'Tis the season to mutilate rubber cows. Just ask Gateway.

Chip Chat's Cow Chop



PC company Gateway caused great amusement in the Chip Chat offices when it sent out a letter recalling its famous rubber stress cows. Apparently, there's a slight risk that they'll tear, presenting a choking risk to children. Being a rational being, Chip Chat decided to scientifically test this assertion.



'Stress cows' are designed to provide the kind of stress relief pictured here. We're not sure what this says about human beings, but our hand model certainly felt much better afterwards. As the illustration below confirms, however, the cow did in fact feel somewhat worse.

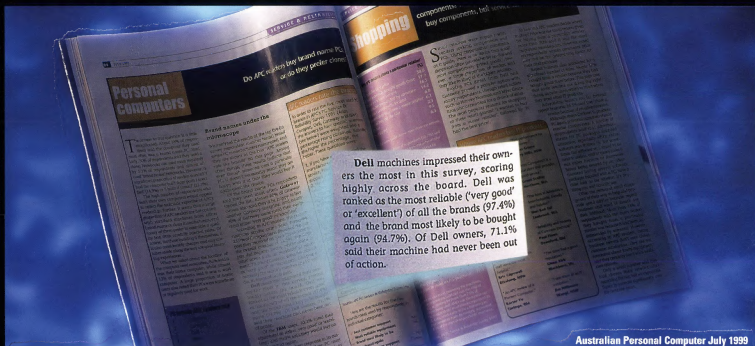


But don't panic! As the picture at right demonstrates, even a badly torn stress cow can easily be fixed using equipment found in any home. Compare the damaged cow on the left with the unblemished cow (right). We challenge you to spot the difference! So don't return your cows to Gateway; just grab a roll of sticky tape and let 'em rip!



Chip Chat will return to something like its normal form next month. Or perhaps not.

THANKS AUSTRALIA, FOR VOTING US NUMBER ONE FOR SERVICE AND RELIABILITY*



Australian Personal Computer July 1999

DESKTOP REPLACEMENT NOTEBOOK DELL: INSPIRON™ 7500 486/NT NOTEBOOK INTEL® PENTIUM™ III PROCESSOR 450MHz

- On-Die 256KB L2 Cache
- 128MB 100MHz SDRAM
- 10GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 32mm 10/180 LAN CardBus PC Card
- 8MB AT-RAGE Memory™ # 7X AGP Video Controller
- High-Fidelity Audio SoundBlaster Compatible
- 24K Max Variable CD-ROM Drive
- 15" XGA Colour TFT Display
- Microsoft® Windows® 95 Second Edition
- Microsoft® DEM Works Suite 95
- 1 Year Limited Warranty (With International Warranty)

• Free Lifetime Telephone Technical Support

MULTIMEDIA SYSTEM DELL DIMENSION™ XPS T500 DESKTOP INTEL® PENTIUM™ III PROCESSOR 500MHz

- Mini Tower Model
- 572MB Integrated L2 Cache
- 64MB 100MHz SDRAM
- 6.4GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- 16MB SDRAM Video 3000 AGP Graphics Card
- Turtle Beach Montage II 3200 Voice PC Sound Card
- 48X Max Variable CD-ROM Drive
- Harmon Karaoke HK136 Speakers
- 17" Colour Monitor (15.5" v.i.s.)
- Microsoft® IntelliMouse™
- Microsoft® Windows® 95 Second Edition
- Microsoft® DEM Works Suite 95
- McAfee Virus Scan
- 32mm USB Robotics 58K PCI Voice Faxmodem for Windows
- Dell QuietKey Keyboard
- 3 Year Limited Warranty

• Free Lifetime Telephone Technical Support

SMALL BUSINESS SYSTEM DELL DIMENSION™ L433C DESKTOP INTEL® CELERON™ PROCESSOR 433MHz

- Micro Tower Model
- 128KB Integrated L2 Cache
- 32MB 100MHz SDRAM
- 4.3GB Ultra ATA Hard Drive
- 3.5" 1.44MB Diskette Drive
- Integrated Intel 10/100 PCI Ethernet Controller
- Integrated Intel AGP 4MB Dynamic Video Memory
- Integrated Creative Labs 64 Voice Sound
- 40X Max Variable CD-ROM Drive
- 15" Colour Monitor (13.7" v.i.s.)
- Microsoft® IntelliMouse™
- Microsoft® Windows® 95 Second Edition
- Microsoft® DEM Works Suite 95
- McAfee Virus Scan
- Dell QuietKey Keyboard
- 3 Year Limited Warranty

• Free Lifetime Telephone Technical Support

Dell tops Australian Personal Computer's

Reader's Choice for PC Service & Reliability Survey - July 1999.

Fitted against the top Australian brands used by APC readers, and judged on categories including reliability, customer support, and willingness to buy again – Dell is out in front. We have been voted the winner, by the people who know best. People just like you. People who rely on PCs to drive their businesses and home offices have chosen Dell as No.1 for service and reliability. Obviously, we believe it's not enough to just build great computers. Providing superior service and support is also a critical factor for our customers. That's why you'll receive FREE Lifetime Telephone Technical Support, and we'll be talking to our trained technical support staff so they understand your system. So in the rare event you do have a problem, we'll see that it won't be a problem for long. Invest in a Dell computer for your home or office and you can rest assured you'll be making the preferred choice of APC readers.

\$5,079* plus delivery

\$43 per week**

- Upgrade to:
- 16GB Ultra ATA Hard Drive \$554
- RealPoint CardBus Ethernet 10/100 & Modem \$6 (320H) \$280
- Add Advanced Port Replicator \$625
- Add Storage Cak™ PC Card Drive with one Cak™ Disk \$269

E-VALUE CODE 521126A-470311

\$2,299* plus delivery

\$19 per week**

- Upgrade to:
- 15.5" B&W Ultra ATA Hard Drive (7,200rpm) \$131
- 17" Colour Monitor (17.5" v.i.s.) \$430
- 8X Max Variable DVD-ROM Drive and Software Recording \$94
- Jumpa Zip 250MB Internal Drive \$29

E-VALUE CODE 211112A-470311

\$1,549* plus delivery

\$13 per week**

- Upgrade to:
- 6.4GB Ultra ATA Hard Drive \$37
- 17" Colour Monitor (15.5" v.i.s.) \$187
- Microsoft® DEM Office 2000 Small Business Edition \$781
- Add Jumpa Zip 250MB Internal Drive \$140

E-VALUE CODE 221108A-470311



To order call Monday Mon to Fri 8am-8pm,
Sat 9am-3pm (EST)

In New Zealand call 0800 937 739*

for pricing and other information.

1300 303 195



USE THE POWER OF
THE E-VALUE™ CODE.

MATCH OUR LATEST TECHNOLOGY WITH OUR
LATEST PRICES. ENTER THE E-VALUE CODE
ONLINE AT WWW.DELL.COM/AU OR GIVE IT
TO YOUR SALES REP OVER THE PHONE.

BUILD YOUR OWN AND ORDER ON-LINE

BE DIRECT™

DELL

www.dell.com.au

DELL'S NORMAL TERMS AND CONDITIONS APPLY AND ARE AVAILABLE ON REQUEST. PLEASE CALL OR REQUEST ON-LINE.

*Prices and specifications valid only in Australia and subject to change without notice. All prices shown include tax but delivery is additional. Certain configurations cannot be changed. Dell, the Dell logo and Dell Dimension are registered trademarks and Inspiron is a trademark and E-Value is a service mark of Dell Computer Corporation. The Intel Inside logo and Pentium are registered trademarks and Celeron is a trademark of Intel Corporation. Microsoft, Windows 98 and Windows NT are registered trademarks of Microsoft Corporation. Other trademarks and trade names may be used in this document refer to either the entities' claiming marks and names or their products. Dell disclaims proprietary interest in the marks and the names of others. For hard drives GB means 1 billion bytes total accessible capacity varies depending upon operating environment. *17X Min., *2.5X Min., *12X Min., *17X Min. All efforts will be made to check for errors in typographic, however, inadvertent errors may occur for which Dell may not be responsible. Lifetime telephone technical support refers to lifetime of the system. **Call centre charge for rentals based on a 36 month term excluding stamp duty and FID which varies from state to state. Rentals and operating leases are available only to approved companies and business customers. Figures shown are indicative and may vary with interest rates. Copyright 1999 Dell Computer Corporation. All Rights Reserved.

DELL09/APC/S&P

TPG GOES WILD!

FREE

Unlimited Internet Hours!

3 months of unlimited free hours + \$30 admin fee

• AVAILABLE IN SYDNEY, PENRITH, KIAMA/WOLLONGONG, LAKE MACQUARIE, MELBOURNE, BRISBANE, SOUTHPORT, CANBERRA, ADELAIDE, PERTH, HOBART, LAUNCESTON AND DARWIN •
• COMING SOON IN GOSFORD, CAMPBELLTOWN AND MORNINGTON •

TPG Wild Pack*

3 months

Register Online www.tpg.com.au

E-mail: internet_sales@tpg.com.au



A Prominent ISP With 70 Locations

OTHER INTERNET SERVICES AVAILABLE:

- **56K Permanent** Connections
\$150 Per Month + \$200 Setup Once Off - Metro Areas
Includes FREE Web Site & Domain Name Hosting Up To 10Mb For 1 Year; Regional Prices On Request
- **Web Site & Domain Name** Hosting

• FREE Email Address • FREE 10Mb Web Space • V.90 & K56flex •

NATIONWIDE: 1300 360 855
▲ SYDNEY: 02 9850 0888 ▲

* * TPG Wild Pack - Conditions Apply, Unlimited 3 Hour Sessions, 100Mb Download Per Month; Credit Card Only • Telephone connection charges are the Subscribers responsibility; to ensure the TPG Access Number is a local call check with Telstra on 12552 • TPG Internet Subscribers are bound by the standard Terms and Conditions found on the TPG web site •